Illinois Department of Transportation
2300 South Dirksen Parkway / Springfield, Illinois / 62764

February 17, 2004

SUBJECT: FAU Route 2615
Project M-8003(143)
Section 00-00140-00-PV (Lombard)
DuPage County
Contract No. 83736
Item 84 A
March 5, 2004 Letting

TO PROSPECTIVE BIDDERS:

In accordance with your request, we have sent you plans and/or a proposal for the subject improvement.

Due to clarify information necessary to revise the following:

Proposal – Revise paragraph "Materials" on Page 47 in Special Provisions.

Prime contractors must utilize the enclosed material when preparing their bid and must include any Schedule of Prices changes in their bidding proposal. Bidders using computer-generated bids are cautioned to reflect any and all Schedule of Prices changes, if involved, into their computer programs.

Since the proposal sheets are printed back to back, bidders are cautioned to exercise care when inserting revised and/or added special provisions into their proposals.

Please call 217-782-7806 if any of the above-described material is not included in this transmittal.

Very truly yours,

Michael L. Hine
Engineer of Design and Environment

By: Ted B. Walschleger
Engineer of Project Development
and Implementation

If you plan to submit a bid directly to the Department of Transportation

PREQUALIFICATION

Any contractor who desires to become pre-qualified to bid on work advertised by IDOT must submit the properly completed pre-qualification forms to the Bureau of Construction no later that 4:30 p.m. prevailing time twenty-one days prior to the letting of interest. This pre-qualification requirement applies to first time contractors, contractors renewing expired ratings, contractors maintaining continuous pre-qualification or contractors requesting revised ratings. To be eligible to bid, existing pre-qualification ratings must be effective through the date of letting.

REQUESTS FOR AUTHORIZATION TO BID

Contractors receiving paper plans and/or proposals who are wanting to bid on items included in a particular letting must submit the properly completed "Request for Proposal Forms and Plans & Request for Authorization to Bid" (BDE 124) or Contractors downloading plans and/or proposals who are wanting to bid on items included in a particular letting must submit the properly completed "Request for Authorization to Bid/or Not For Bid Status" (BDE 124INT)and the ORIGINAL "Affidavit of Availability" (BC 57) to the proper office no later than 4:30 p.m. prevailing time, three (3) days prior to the letting date.

WHO CAN BID ?

Bids will be accepted from only those companies that request and receive written **Authorization to Bid** from IDOT's Central Bureau of Construction.

WHAT CONSTITUTES WRITTEN AUTHORIZATION TO BID?: When a prospective prime bidder submits a "Request for Proposal Forms and Plans"(BDE 124) or "Request for Authorization to Bid/or Not For Bid Status"(BDE 124INT) he/she must indicate at that time which items are being requested For Bidding purposes. Only those items requested For Bidding will be analyzed. After the request has been analyzed, the bidder will be issued a **Proposal Denial and/or Authorization Form**, approved by the Central Bureau of Construction, that indicates which items have been approved For Bidding. If **Authorization to Bid** cannot be approved, the **Proposal Denial and/or Authorization Form** will indicate the reason for denial.

ABOUT AUTHORIZATION TO BID: Firms that have not received an authorization form within a reasonable time of complete and correct original document submittal should contact the department as to status. This is critical in the week before the letting. These documents must be received three days before the letting date. Firms unsure as to authorization status should call the Prequalification Section of the Bureau of Construction at the number listed at the end of these instructions.

ADDENDA: It is the contractor's responsibility to determine which, if any, addenda pertains to any project they may be bidding. Failure to incorporate all relevant addenda may cause the bid to be declared unacceptable. When the Department implements electronic **ONLY** Plans and Proposals it will not send addenda to individual plan holders. Each addendum will be placed with the electronic Plan and/or Proposal. Addenda will also be placed on the Addendum Checklist and each subscription service subscriber will be notified by e-mail of each addendum issued. The Internet is the Department's primary way of doing business. The subscription server e-mails are an added courtesy the Department provides. It is suggested that bidder check IDOT's website www.dot.state.il.us before submitting final bid information.

IDOT is not responsible for any e-mail related failures.
Questions may be directed to Jim Duncan at 217-782-7806 or duncanjr@nt.dot.state.il.us.

WHAT MUST BE INCLUDED WHEN BIDS ARE SUBMITTED?: Bidders need not return the entire proposal when bids are submitted. That portion of the proposal that must be returned includes the following:

1. All documents from the Proposal Cover Sheet through the Proposal Bid Bond
2. Other special documentation and/or information that may be required by the contract special provisions

All proposal documents, including Proposal Guaranty Checks or Proposal Bid Bonds, should be stapled together to prevent loss when bids are processed by IDOT personnel.

ABOUT SUBMITTING BIDS: It is recommended that bidders deliver bids in person to insure they arrive at the proper location prior to the time specified for the receipt of bids. Any bid received at the place of letting after the time specified will not be accepted.

WHO SHOULD BE CALLED IF ASSISTANCE IS NEEDED?

Questions Regarding	**Call**
Prequalification and/or Authorization to Bid	217/782-3413
Preparation and submittal of bids	217/782-7806
Mailing of plans and proposals	217/782-7806
Electronic plans and proposals	217/785-5875

ADDENDUMS TO THE PROPOSAL FORMS

Planholders should verify that they have received and incorporated the revisions prior to submitting their bid. If plans/proposals were requested/downloaded prior to the date of the addendum, an addendum package should have been mailed to the planholder or updated electronically on IDOT's website. If plans/proposals were ordered/downloaded after the date of the addendum, the plans/proposal package should already include all revisions and an identifying addendum sheet immediately after the proposal cover sheet. Failure by the bidder to include an addendum could result in a bid being rejected as irregular. If a planholder has not received an addendum within 5 days after the addendum date noted, they should call 217-782-7806.

RETURN WITH BID

84

Proposal Submitted By
Name
Address
City

Letting March 5, 2004

BIDDERS NEED NOT RETURN THE ENTIRE PROPOSAL
(See instructions inside front cover)

NOTICE TO PROSPECTIVE BIDDERS
This proposal can be used for bidding purposes by only those companies that request and receive written AUTHORIZATION TO BID from IDOT's Central Bureau of Construction.
(SEE INSTRUCTIONS ON THE INSIDE OF COVER)

Notice To Bidders, Specifications, Proposal, Contract and Contract Bond

Illinois Department of Transportation

Springfield, Illinois 62764

Contract No. 83736
DUPAGE County
Section 00-00140-00-PV (Lombard)
Project M-8003(143)
Route FAU 2615 (Highland Avenue)
District 1 Construction Funds

PLEASE MARK THE APPROPRIATE BOX BELOW:

☐ A Bid Bond is included.

☐ A Cashier's Check or a Certified Check is included

Prepared by

Checked by F

(Printed by authority of the State of Illinois)

INSTRUCTIONS

ABOUT IDOT PROPOSALS: All proposals issued by IDOT are potential bidding proposals. Each proposal contains all Certifications and Affidavits, a Proposal Signature Sheet and a Proposal Bid Bond required for Prime Contractors to submit a bid after written **Authorization to Bid** has been issued by IDOT's Central Bureau of Construction.

HOW MANY PROPOSALS SHOULD PROSPECTIVE BIDDERS REQUEST?: Prospective bidders should, prior to submitting their initial request for plans and proposals, determine their needs and request the total number of plans and proposals needed for each item requested. There will be a nonrefundable charge of $15 for each set of plans and specifications issued.

WHO CAN BID?: Bids will be accepted from only those companies that request and receive written **Authorization to Bid** from IDOT's Central Bureau of Construction. To request authorization, a potential bidder must complete and submit Part B of the Request for Proposal Forms and Plans & Request for Authorization to Bid form (BDE 124) and submit an original Affidavit of Availability (BC 57).

WHAT CONSTITUTES WRITTEN AUTHORIZATION TO BID?: When a prospective prime bidder submits a "Request for Proposal Forms and Plans" he/she must indicate at that time which items are being requested For Bidding purposes. Only those items requested For Bidding will be analyzed. After the request has been analyzed, the bidder will be issued a **Proposal Denial and/or Authorization Form**, approved by the Central Bureau of Construction, that indicates which items have been approved For Bidding. If **Authorization to Bid** cannot be approved, the **Proposal Denial and/or Authorization Form** will indicate the reason for denial. If a contractor has requested to bid but has not received a **Proposal Denial and/or Authorization Form**, they should contact the Central Bureau of Construction in advance of the letting date.

WHAT MUST BE INCLUDED WHEN BIDS ARE SUBMITTED?: Bidders need not return the entire proposal when bids are submitted. That portion of the proposal that must be returned includes the following:

1. All documents from the Proposal Cover Sheet through the Proposal Bid Bond
2. Other special documentation and/or information that may be required by the contract special provisions

All proposal documents, including Proposal Guaranty Checks or Proposal Bid Bonds, should be stapled together to prevent loss when bids are processed by IDOT personnel.

ABOUT SUBMITTING BIDS: It is recommended that bidders deliver bids in person to insure they arrive at the proper location prior to the time specified for the receipt of bids. Any bid received at the place of letting after the time specified will not be accepted.

WHO SHOULD BE CALLED IF ASSISTANCE IS NEEDED?

Questions Regarding	Call
Prequalification and/or Authorization to Bid	217/782-3413
Preparation and submittal of bids	217/782-7806
Mailing of plans and proposals	217/782-7806

RETURN WITH BID

Illinois Department of Transportation

PROPOSAL

TO THE DEPARTMENT OF TRANSPORTATION

1. Proposal of _____

_____

for the improvement identified and advertised for bids in the Invitation for Bids as:

Contract No. 83736
DUPAGE County
Section 00-00140-00-PV (Lombard)
Project M-8003(143)
Route FAU 2615 (Highland Avenue)
District 1 Construction Funds

0.60 mile of roadway reconstruction to include new curb and gutter, concrete median, sidewalk, retaining walls, modernizing three existing traffic signals with video detection, storm sewers and water main construction from Illinois Route 56 to 22nd Street in Lombard.

2. The undersigned bidder will furnish all labor, material and equipment to complete the above described project in a good and workmanlike manner as provided in the contract documents provided by the Department of Transportation. This proposal will become part of the contract and the terms and conditions contained in the contract documents shall govern performance and payments.

3. **ASSURANCE OF EXAMINATION AND INSPECTION/WAIVER.** The undersigned further declares that he/she has carefully examined the proposal, plans, specifications, form of contract and contract bond, and special provisions, and that he/she has inspected in detail the site of the proposed work, and that he/she has familiarized themselves with all of the local conditions affecting the contract and the detailed requirements of construction, and understands that in making this proposal he/she waives all right to plead any misunderstanding regarding the same.

4. **EXECUTION OF CONTRACT AND CONTRACT BOND.** The undersigned further agrees to execute a contract for this work and present the same to the department within fifteen (15) days after the contract has been mailed to him/her. The undersigned further agrees that he/she and his/her surety will execute and present within fifteen (15) days after the contract has been mailed to him/her contract bond satisfactory to and in the form prescribed by the Department of Transportation, in the penal sum of the full amount of the contract, guaranteeing the faithful performance of the work in accordance with the terms of the contract.

5. **PROPOSAL GUARANTY.** Accompanying this proposal is either a bid bond on the department form, executed by a corporate surety company satisfactory to the department, or a proposal guaranty check consisting of a bank cashier's check or a properly certified check for not less than 5 per cent of the amount bid or for the amount specified in the following schedule:

Amount of Bid			Proposal Guaranty	Amount of Bid			Proposal Guaranty
Up to		$5,000	$150	$2,000,000	to	$3,000,000	$100,000
$5,000	to	$10,000	$300	$3,000,000	to	$5,000,000	$150,000
$10,000	to	$50,000	$1,000	$5,000,000	to	$7,500,000	$250,000
$50,000	to	$100,000	$3,000	$7,500,000	to	$10,000,000	$400,000
$100,000	to	$150,000	$5,000	$10,000,000	to	$15,000,000	$500,000
$150,000	to	$250,000	$7,500	$15,000,000	to	$20,000,000	$600,000
$250,000	to	$500,000	$12,500	$20,000,000	to	$25,000,000	$700,000
$500,000	to	$1,000,000	$25,000	$25,000,000	to	$30,000,000	$800,000
$1,000,000	to	$1,500,000	$50,000	$30,000,000	to	$35,000,000	$900,000
$1,500,000	to	$2,000,000	$75,000	over		$35,000,000	$1,000,000

Bank cashier's checks or properly certified checks accompanying proposals shall be made payable to the Treasurer, State of Illinois, when the state is awarding authority; the county treasurer, when a county is the awarding authority; or the city, village, or town treasurer, when a city, village, or town is the awarding authority.

If a combination bid is submitted, the proposal guaranties which accompany the individual proposals making up the combination will be considered as also covering the combination bid.

The amount of the proposal guaranty check is _____ $( ). If this proposal is accepted and the undersigned shall fail to execute a contract bond as required herein, it is hereby agreed that the amount of the proposal guaranty shall become the property of the State of Illinois, and shall be considered as payment of damages due to delay and other causes suffered by the State because of the failure to execute said contract and contract bond; otherwise, the bid bond shall become void or the proposal guaranty check shall be returned to the undersigned.

Attach Cashier's Check or Certified Check Here

In the event that one proposal guaranty check is intended to cover two or more proposals, the amount must be equal to the sum of the proposal guaranties which would be required for each individual proposal. If the guaranty check is placed in another proposal, state below where it may be found.

The proposal guaranty check will be found in the proposal for:

Item _____

Section No. _____

County _____

Mark the proposal cover sheet as to the type of proposal guaranty submitted.

BD 354 (Rev. 11/2001)

6. **COMBINATION BIDS.** The undersigned further agrees that if awarded the contract for the sections contained in the following combination, he/she will perform the work in accordance with the requirements of each individual proposal comprising the combination bid specified in the schedule below, and that the combination bid shall be prorated against each section in proportion to the bid submitted for the same. If an error is found to exist in the gross sum bid for one or more of the individual sections included in a combination, the combination bid shall be corrected as provided in the specifications.

When a combination bid is submitted, the schedule below must be completed in each proposal comprising the combination.

If alternate bids are submitted for one or more of the sections comprising the combination, a combination bid must be submitted for each alternate.

Schedule of Combination Bids

Combination No.	Sections Included in Combination	Combination Bid Dollars	Cents

7. **SCHEDULE OF PRICES.** The undersigned bidder submits herewith, in accordance with the rules and instructions, a schedule of prices for the items of work for which bids are sought. The unit prices bid are in U.S. dollars and cents, and all extensions and summations have been made. The bidder understands that the quantities appearing in the bid schedule are approximate and are provided for the purpose of obtaining a gross sum for the comparison of bids. If there is an error in the extension of the unit prices, the unit prices shall govern. Payment to the contractor awarded the contract will be made only for actual quantities of work performed and accepted or materials furnished according to the contract. The scheduled quantities of work to be done and materials to be furnished may be increased, decreased or omitted as provided elsewhere in the contract.

8. **CERTIFICATE OF AUTHORITY.** The undersigned bidder, if a business organized under the laws of another State, assures the Department that it will furnish a copy of its certificate of authority to do business in the State of Illinois with the return of the executed contract and bond. Failure to furnish the certificate within the time provided for execution of an awarded contract may be cause for cancellation of the award and forfeiture of the proposal guaranty to the State.

COUNTY NAME	CODE	DIST	SECTION NUMBER	PROJECT NUMBER	ROUTE
DUPAGE	043	01	00-00140-00-PV (LOMBARD)	M-8003/143/000	FAU 2615

ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY		UNIT PRICE DOLLARS	UNIT PRICE CENTS		TOTAL PRICE DOLLARS	TOTAL PRICE CTS
A2004116	T-FRAX PENN PAT 2	EACH	2.000	X			=		
C2C03724	S-HYPER KALM 2'C	EACH	32.000	X			=		
C2C05824	S-RHUS AROMA GRO 2'C	EACH	14.000	X			=		
XX002856	RE-OPTIMIZE TR SIG SY	L SUM	1.000	X			=		
XX003536	CONN EX W MN NP	EACH	5.000	X			=		
XX003552	VIDEO DETECT SYS	EACH	3.000	X			=		
XX003553	VIDEO TRANS SYS	EACH	1.000	X			=		
XX003661	ELCBL C COAXIAL	FOOT	92.000	X			=		
XX003662	ELCBL C VIDEO #20 3C	FOOT	92.000	X			=		
XX003665	REBLD EX HH TO DB HH	EACH	1.000	X			=		
XX003668	PRECONSTRUCT VID TAP	L SUM	1.000	X			=		
XX003885	IRRIGATION SYSTEM	L SUM	1.000	X			=		
XX004065	LINE STOP 8	EACH	1.000	X			=		
XX004546	NARCISSUS BULB	EACH	888.000	X			=		
XX004810	VV TA 6 DIA T1F CL	EACH	10.000	X			=		

ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY	UNIT PRICE DOLLARS	UNIT PRICE CENTS		TOTAL PRICE DOLLARS	TOTAL PRICE CTS
XX004971	LINE STOP 6	EACH	1.000			=		
XX004972	LINE STOP 12	EACH	1.000			=		
XX005646	TAP VALVE & SLEEVE 20	EACH	1.000			=		
XX005647	LINE STOP 16	EACH	2.000			=		
XX005648	LINE STOP 20	EACH	2.000			=		
XX005649	F & P TOP SOIL VAR	CU YD	90.000			=		
XX005650	PLANTING & MAINTENACE	L SUM	1.000			=		
XX005651	DRAINAGE BOARD	SQ FT	470.000			=		
XX005652	MED WALL C-I-P CONC	FT	120.000			=		
XX005653	AGG BACKFILL CA-7	CU YD	100.000			=		
XX005654	ANDRO SCOPARIUS PLUG	EACH	198.000			=		
XX005655	SS SEWER REM UNDER18"	FOOT	450.000			=		
XX005656	INLET FILTER CLEANING	EACH	96.000			=		
XX011700	WATER MAIN FITTINGS	POUND	17,820.000			=		
X0324120	STEEL CASING PIPE 48	FOOT	68.000			=		

ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY		UNIT PRICE DOLLARS	UNIT PRICE CENTS		TOTAL PRICE DOLLARS	TOTAL PRICE CTS
X7015000	CHANGEABLE MESSAGE SN	CAL MO	24.000	X			=		
X8050010	SERV INSTALL GRND MT	EACH	3.000	X			=		
X8730027	ELCBL C GROUND 6 1C	FOOT	2,230.000	X			=		
X8730250	ELCBL C 20 3C TW SH	FOOT	2,513.000	X			=		
X8800020	SH LED 1F 3S MAM	EACH	18.000	X			=		
X8800035	SH LED 1F 3S BM	EACH	4.000	X			=		
X8800040	SH LED 1F 5S BM	EACH	5.000	X			=		
X8800045	SH LED 1F 5S MAM	EACH	10.000	X			=		
X8805280	SH LED 2F 1-3 1-5 BM	EACH	5.000	X			=		
X8805320	SH LED 3F 2-3 1-5 BM	EACH	1.000	X			=		
X8810610	PED SH LED 1F BM	EACH	6.000	X			=		
Z0000990	AGG FOR TEMP ACCESS	TON	500.000	X			=		
Z0013798	CONSTRUCTION LAYOUT	L SUM	1.000	X			=		
Z0019600	DUST CONTROL WATERING	UNIT	100.000	X			=		
Z0034730	MODULAR RET WALL SYS	SQ FT	750.000	X			=		

ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY	UNIT PRICE DOLLARS	UNIT PRICE CENTS		TOTAL PRICE DOLLARS	TOTAL PRICE CTS
20100110	TREE REMOV 6-15	UNIT	12.000	X		=		
20200100	EARTH EXCAVATION	CU YD	9,250.000	X		=		
20201200	REM & DISP UNS MATL	CU YD	3,700.000	X		=		
20700400	POROUS GRAN EMB SPEC	CU YD	3,700.000	X		=		
20800250	TRENCH BACKFILL SPL	CU YD	1,720.000	X		=		
21001000	GEOTECH FAB F/GR STAB	SQ YD	3,700.000	X		=		
21101615	TOPSOIL F & P 4	SQ YD	5,100.000	X		=		
21300010	EXPLOR TRENCH SPL	FOOT	200.000	X		=		
25200200	SUPPLE WATERING	UNIT	200.000	X		=		
25200700	SODDING SPL	SQ YD	5,100.000	X		=		
28000250	TEMP EROS CONTR SEED	POUND	100.000	X		=		
28000400	PERIMETER EROS BAR	FOOT	2,780.000	X		=		
28000510	INLET FILTERS	EACH	48.000	X		=		
31101400	SUB GRAN MAT B 6	SQ YD	33,500.000	X		=		
40800040	INCIDENTAL BIT SURF	TON	400.000	X		=		

ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY	UNIT PRICE DOLLARS	UNIT PRICE CENTS		TOTAL PRICE DOLLARS	TOTAL PRICE CTS
42000501	PCC PVT 10 JOINTED	SQ YD	29,100.000	X		=		
42001300	PROTECTIVE COAT	SQ YD	34,000.000	X		=		
42301100	PCC DRIVEWAY PAVT SPL	SQ YD	330.000	X		=		
42400430	PC CONC SIDEWALK 5 SP	SQ FT	6,600.000	X		=		
44000100	PAVEMENT REM	SQ YD	27,815.000	X		=		
44000200	DRIVE PAVEMENT REM	SQ YD	590.000	X		=		
44000300	CURB REM	FOOT	160.000	X		=		
44000500	COMB CURB GUTTER REM	FOOT	13,650.000	X		=		
44000600	SIDEWALK REM	SQ FT	2,650.000	X		=		
44002020	CONC MEDIAN SURF REM	SQ FT	7,730.000	X		=		
44002805	ISLAND REMOVAL	SQ FT	2,140.000	X		=		
44003100	MEDIAN REMOVAL	SQ FT	550.000	X		=		
44200976	CL B PATCH T4 10	SQ YD	320.000	X		=		
55019500	SS 1 RCP CL 4 12	FOOT	250.000	X		=		
55019600	SS 1 RCP CL 4 15	FOOT	8.000	X		=		

ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY		UNIT PRICE DOLLARS	UNIT PRICE CENTS		TOTAL PRICE DOLLARS	TOTAL PRICE CTS
55020000	SS 1 RCP CL 4 27	FOOT	25.000	X			=		
55101100	STORM SEWER REM 21	FOOT	40.000	X			=		
55101300	STORM SEWER REM 27	FOOT	25.000	X			=		
56103000	D I WATER MAIN 6	FOOT	53.000	X			=		
56103100	D I WATER MAIN 8	FOOT	155.000	X			=		
56103300	D I WATER MAIN 12	FOOT	150.000	X			=		
56103400	D I WATER MAIN 16	FOOT	80.000	X			=		
56103510	D I WATER MAIN 20	FOOT	1,500.000	X			=		
56105000	WATER VALVES 8	EACH	2.000	X			=		
56105200	WATER VALVES 12	EACH	2.000	X			=		
56105300	WATER VALVES 16	EACH	1.000	X			=		
56105410	WATER VALVES 20	EACH	8.000	X			=		
56200700	WATER SERV LINE 2	FOOT	105.000	X			=		
56201800	CORP STOPS 2	EACH	1.000	X			=		
56300100	ADJ SAN SEWER 8 LESS	FOOT	200.000	X			=		

ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY		UNIT PRICE DOLLARS	UNIT PRICE CENTS		TOTAL PRICE DOLLARS	TOTAL PRICE CTS
56300300	ADJ WATER SERV LINES	FOOT	200.000	X			=		
56400300	FIRE HYDNTS TO BE ADJ	EACH	2.000	X			=		
56400500	FIRE HYDNTS TO BE REM	EACH	4.000	X			=		
56400810	FIRE HYDRANT EXTEN	FOOT	10.000	X			=		
56400820	FIRE HYD W/AUX V & VB	EACH	10.000	X			=		
60107700	PIPE UNDERDRAINS 6	FOOT	170.000	X			=		
60201340	CB TA 4 DIA T24F&G	EACH	12.000	X			=		
60208240	CB TC T24F&G	EACH	7.000	X			=		
60218400	MAN TA 4 DIA T1F CL	EACH	1.000	X			=		
60221100	MAN TA 5 DIA T1F CL	EACH	1.000	X			=		
60237470	INLETS TA T24F&G	EACH	9.000	X			=		
60240328	INLETS TB T24F&G	EACH	1.000	X			=		
60248900	VV TA 5 DIA T1F CL	EACH	4.000	X			=		
60250200	CB ADJUST	EACH	4.000	X			=		
60252800	CB RECONST	EACH	5.000	X			=		

ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY		UNIT PRICE DOLLARS	UNIT PRICE CENTS		TOTAL PRICE DOLLARS	TOTAL PRICE CTS
60255500	MAN ADJUST	EACH	17.000	X			=		
60257900	MAN RECONST	EACH	5.000	X			=		
60260100	INLETS ADJUST	EACH	9.000	X			=		
60265700	VV ADJUST	EACH	3.000	X			=		
60266100	VV RECONST	EACH	5.000	X			=		
60266600	VALVE BOX ADJ	EACH	7.000	X			=		
60500040	REMOV MANHOLES	EACH	3.000	X			=		
60500050	REMOV CATCH BAS	EACH	8.000	X			=		
60500060	REMOV INLETS	EACH	12.000	X			=		
60500370	FILL VALVE BOXES	EACH	2.000	X			=		
60500405	FILL VALVE VLTS	EACH	6.000	X			=		
60600605	CONC CURB TB	FOOT	20.000	X			=		
60603800	COMB CC&G TB6.12	FOOT	6,000.000	X			=		
60605000	COMB CC&G TB6.24	FOOT	7,250.000	X			=		
60610900	COMB CC&G TM6.24 VWGF	FOOT	2,485.000	X			=		

ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY		UNIT PRICE DOLLARS	UNIT PRICE CENTS		TOTAL PRICE DOLLARS	TOTAL PRICE CTS
60618324	CONC MEDIAN SURF 6 SP	SQ FT	11,955.000	X			=		
60619600	CONC MED TSB6.12	SQ FT	410.000	X			=		
61140200	STORM SEWER SPEC 12	FOOT	230.000	X			=		
61140800	STORM SEWER SPEC 21	FOOT	40.000	X			=		
67000200	ENGR FIELD OFFICE A	EACH	1.000	X			=		
70101700	TRAF CONT & PROT	L SUM	1.000	X			=		
70103816	TR CONT SURVEILLANCE	CAL MO	8.000	X			=		
70300510	PAVT MARK TAPE T3 L&S	SQ FT	150.000	X			=		
70300520	PAVT MARK TAPE T3 4	FOOT	400.000	X			=		
70300540	PAVT MARK TAPE T3 6	FOOT	400.000	X			=		
70300570	PAVT MARK TAPE T3 24	FOOT	120.000	X			=		
72000100	SIGN PANEL T1	SQ FT	101.000	X			=		
78001100	PT PVT MK LTRS & SYMB	SQ FT	440.000	X			=		
78001110	PAINT PVT MK LINE 4	FOOT	3,700.000	X			=		
78001130	PAINT PVT MK LINE 6	FOOT	2,500.000	X			=		

ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY	UNIT PRICE DOLLARS	UNIT PRICE CENTS		TOTAL PRICE DOLLARS	TOTAL PRICE CTS
78001140	PAINT PVT MK LINE 8	FOOT	400.000			X =		
78001150	PAINT PVT MK LINE 12	FOOT	250.000			X =		
78001180	PAINT PVT MK LINE 24	FOOT	240.000			X =		
78004100	PREF PL PM TC LTR-SYM	SQ FT	880.000			X =		
78004110	PREF PL PM TC LINE 4	FOOT	7,420.000			X =		
78004130	PREF PL PM TC LINE 6	FOOT	3,280.000			X =		
78004140	PREF PL PM TC LINE 8	FOOT	650.000			X =		
78004150	PREF PL PM TC LINE 12	FOOT	460.000			X =		
78004180	PREF PL PM TC LINE 24	FOOT	440.000			X =		
78100100	RAISED REFL PAVT MKR	EACH	240.000			X =		
78300100	PAVT MARKING REMOVAL	SQ FT	500.000			X =		
81000600	CON T 2 GALVS	FOOT	886.000			X =		
81000700	CON T 2 1/2 GALVS	FOOT	259.000			X =		
81000800	CON T 3 GALVS	FOOT	78.000			X =		
81001000	CON T 4 GALVS	FOOT	70.000			X =		

ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY	UNIT PRICE DOLLARS	UNIT PRICE CENTS		TOTAL PRICE DOLLARS	TOTAL PRICE CTS
81018500	CON P 2 GALVS	FOOT	66.000			X =		
81018600	CON P 2 1/2 GALVS	FOOT	102.000			X =		
81018700	CON P 3 GALVS	FOOT	168.000			X =		
81018900	CON P 4 GALVS	FOOT	818.000			X =		
81400100	HANDHOLE	EACH	10.000			X =		
81400300	DBL HANDHOLE	EACH	4.000			X =		
81500200	TR & BKFIL F ELECT WK	FOOT	1,285.000			X =		
83600200	LIGHT POLE FDN 24D	FOOT	20.000			X =		
84200700	LIGHTING FDN REMOV	EACH	2.000			X =		
84400105	RELOC EX LT UNIT	EACH	2.000			X =		
85000200	MAIN EX TR SIG INSTAL	EACH	4.000			X =		
85700205	FAC T4 CAB SPL	EACH	3.000			X =		
86400100	TRANSCEIVER - FIB OPT	EACH	3.000			X =		
87301215	ELCBL C SIGNAL 14 2C	FOOT	1,519.000			X =		
87301225	ELCBL C SIGNAL 14 3C	FOOT	3,556.000			X =		

ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY		UNIT PRICE DOLLARS	UNIT PRICE CENTS		TOTAL PRICE DOLLARS	TOTAL PRICE CTS
87301245	ELCBL C SIGNAL 14 5C	FOOT	6,355.000	X			=		
87301255	ELCBL C SIGNAL 14 7C	FOOT	4,334.000	X			=		
87301615	ELCBL C COMM 16 6PR	FOOT	2,884.000	X			=		
87301805	ELCBL C SERV 6 2C	FOOT	69.000	X			=		
87502480	TS POST GALVS 14	EACH	2.000	X			=		
87502500	TS POST GALVS 16	EACH	8.000	X			=		
87502520	TS POST GALVS 18	EACH	2.000	X			=		
87702840	STL COMB MAA&P 22	EACH	1.000	X			=		
87702850	STL COMB MAA&P 24	EACH	1.000	X			=		
87702860	STL COMB MAA&P 26	EACH	3.000	X			=		
87702900	STL COMB MAA&P 34	EACH	2.000	X			=		
87702920	STL COMB MAA&P 38	EACH	1.000	X			=		
87702950	STL COMB MAA&P 44	EACH	1.000	X			=		
87702970	STL COMB MAA&P 48	EACH	1.000	X			=		
87702990	STL COMB MAA&P 54	EACH	1.000	X			=		

ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY	UNIT PRICE DOLLARS	UNIT PRICE CENTS		TOTAL PRICE DOLLARS	TOTAL PRICE CTS
87703000	STL COMB MAA&P 55	EACH	1.000			X =		
87800100	CONC FDN TY A	FOOT	52.000			X =		
87800200	CONC FDN TY D	FOOT	8.000			X =		
87800400	CONC FDN TY E 30D	FOOT	180.000			X =		
87900200	DRILL EX HANDHOLE	EACH	3.000			X =		
88200210	TS BACKPLATE LOU ALUM	EACH	28.000			X =		
88700200	LIGHT DETECTOR	EACH	9.000			X =		
88700300	LIGHT DETECTOR AMP	EACH	3.000			X =		
88800100	PED PUSH-BUTTON	EACH	6.000			X =		
89000100	TEMP TR SIG INSTALL	EACH	2.000			X =		
89502200	MOD EX CONTR	EACH	3.000			X =		
89502350	REM & RE ELCBL FR CON	FOOT	1,269.000			X =		
89502375	REMOV EX TS EQUIP	EACH	2.000			X =		
89502380	REMOV EX HANDHOLE	EACH	10.000			X =		
89502385	REMOV EX CONC FDN	EACH	15.000			X =		

ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY		UNIT PRICE DOLLARS	UNIT PRICE CENTS		TOTAL PRICE DOLLARS	TOTAL PRICE CTS
89502500	REM TEMP TR SIG INST	EACH	1.000	X			=		

TOTAL $

NOTE:

1. EACH PAY ITEM SHOULD HAVE A UNIT PRICE AND A TOTAL PRICE.
2. THE UNIT PRICE SHALL GOVERN IF NO TOTAL PRICE IS SHOWN OR IF THERE IS A DISCREPANCY BETWEEN THE PRODUCT OF THE UNIT PRICE MULTIPLIED BY THE QUANTITY.
3. IF A UNIT PRICE IS OMITTED, THE TOTAL PRICE WILL BE DIVIDED BY THE QUANTITY IN ORDER TO ESTABLISH A UNIT PRICE.
4. A BID MAY BE DECLARED UNACCEPTABLE IF NEITHER A UNIT PRICE NOR A TOTAL PRICE IS SHOWN.

RETURN WITH BID

STATE REQUIRED ETHICAL STANDARDS GOVERNING CONTRACT PROCUREMENT: ASSURANCES, CERTIFICATIONS AND DISCLOSURES

I. GENERAL

A. Article 50 of the Illinois Procurement Code establishes the duty of all State chief procurement officers, State purchasing officers, and their designees to maximize the value of the expenditure of public moneys in procuring goods, services, and contracts for the State of Illinois and to act in a manner that maintains the integrity and public trust of State government. In discharging this duty, they are charged by law to use all available information, reasonable efforts, and reasonable actions to protect, safeguard, and maintain the procurement process of the State of Illinois.

B. In order to comply with the provisions of Article 50 and to carry out the duty established therein, all bidders are to adhere to ethical standards established for the procurement process, and to make such assurances, disclosures and certifications required by law. By execution of the Proposal Signature Sheet, the bidder indicates that each of the mandated assurances has been read and understood, that each certification is made and understood, and that each disclosure requirement has been understood and completed.

C. In addition to all other remedies provided by law, failure to comply with any assurance, failure to make any disclosure or the making of a false certification shall be grounds for termination of the contract and the suspension or debarment of the bidder.

II. ASSURANCES

A. The assurances hereinafter made by the bidder are each a material representation of fact upon which reliance is placed should the Department enter into the contract with the bidder. The Department may terminate the contract if it is later determined that the bidder rendered a false or erroneous assurance, and the surety providing the performance bond shall be responsible for the completion of the contract.

B. Felons

1. The Illinois Procurement Code provides:

Section 50-10. Felons. Unless otherwise provided, no person or business convicted of a felony shall do business with the State of Illinois or any state agency from the date of conviction until 5 years after the date of completion of the sentence for that felony, unless no person held responsible by a prosecutorial office for the facts upon which the conviction was based continues to have any involvement with the business.

2. The bidder assures the Department that the award and execution of the contract would not cause a violation of Section 50-10.

C. Conflicts of Interest

1. The Illinois Procurement Code provides in pertinent part:

Section 50-13. Conflicts of Interest.

(a) Prohibition. It is unlawful for any person holding an elective office in this State, holding a seat in the General Assembly, or appointed to or employed in any of the offices or agencies of state government and who receives compensation for such employment in excess of 60% of the salary of the Governor of the State of Illinois, or who is an officer or employee of the Capital Development Board or the Illinois Toll Highway Authority, or who is the spouse or minor child of any such person to have or acquire any contract, or any direct pecuniary interest in any contract therein, whether for stationery, printing, paper, or any services, materials, or supplies, that will be wholly or partially satisfied by the payment of funds appropriated by the General Assembly of the State of Illinois or in any contract of the Capital Development Board or the Illinois Toll Highway authority.

(b) Interests. It is unlawful for any firm, partnership, association or corporation, in which any person listed in subsection (a) is entitled to receive (i) more than 7 1/2% of the total distributable income or (ii) an amount in excess of the salary of the Governor, to have or acquire any such contract or direct pecuniary interest therein.

(c) Combined interests. It is unlawful for any firm, partnership, association, or corporation, in which any person listed in subsection (a) together with his or her spouse or minor children is entitled to receive (i) more than 15%, in the aggregate, of the total distributable income or (ii) an amount in excess of 2 times the salary of the Governor, to have or acquire any such contract or direct pecuniary interest therein.

(d) Securities. Nothing in this Section invalidates the provisions of any bond or other security previously offered or to be offered for sale or sold by or for the State of Illinois.

(e) Prior interests. This Section does not affect the validity of any contract made between the State and an officer or employee of the State or member of the General Assembly, his or her spouse, minor child or any combination of those persons if that contract was in existence before his or her election or employment as an officer, member, or employee. The contract is voidable, however, if it cannot be completed within 365 days after the officer, member, or employee takes office or is employed.

The current salary of the Governor is $150,700.00. Sixty percent of the salary is $90,420.00.

2. The bidder assures the Department that the award and execution of the contract would not cause a violation of Section 50-13, or that an effective exemption has been issued by the Board of Ethics to any individual subject to the Section 50-13 prohibitions pursuant to the provisions of Section 50-20 of the Code and Executive Order Number 3 (1998). Information concerning the exemption process is available from the Department upon request.

D. Negotiations

1. The Illinois Procurement Code provides in pertinent part:

Section 50-15. Negotiations.

(a) It is unlawful for any person employed in or on a continual contractual relationship with any of the offices or agencies of State government to participate in contract negotiations on behalf of that office or agency with any firm, partnership, association, or corporation with whom that person has a contract for future employment or is negotiating concerning possible future employment.

2. The bidder assures the Department that the award and execution of the contract would not cause a violation of Section 50-15, and that the bidder has no knowledge of any facts relevant to the kinds of acts prohibited therein.

E. Inducements

1. The Illinois Procurement Code provides:

Section 50-25. Inducement. Any person who offers or pays any money or other valuable thing to any person to induce him or her not to bid for a State contract or as recompense for not having bid on a State contract is guilty of a Class 4 felony. Any person who accepts any money or other valuable thing for not bidding for a State contract or who withholds a bid in consideration of the promise for the payment of money or other valuable thing is guilty of a Class 4 felony.

2. The bidder assures the Department that the award and execution of the contract would not cause a violation of Section 50-25, and that the bidder has no knowledge of any facts relevant to the kinds of acts prohibited therein.

F. Revolving Door Prohibition

1. The Illinois Procurement Code provides:

Section 50-30. Revolving door prohibition. Chief procurement officers, associate procurement officers, State purchasing officers, their designees whose principal duties are directly related to State procurement, and executive officers confirmed by the Senate are expressly prohibited for a period of 2 years after terminating an affected position from engaging in any procurement activity relating to the State agency most recently employing them in an affected position for a period of at least 6 months. The prohibition includes, but is not limited to: lobbying the procurement process; specifying; bidding; proposing bid, proposal, or contract documents; on their own behalf or on behalf of any firm, partnership, association, or corporation. This Section applies only to persons who terminate an affected position on or after January 15, 1999.

2. The bidder assures the Department that the award and execution of the contract would not cause a violation of Section 50-30, and that the bidder has no knowledge of any facts relevant to the kinds of acts prohibited therein.

G. Reporting Anticompetitive Practices

1. The Illinois Procurement Code provides:

Section 50-40. Reporting anticompetitive practices. When, for any reason, any vendor, bidder, contractor, chief procurement officer, State purchasing officer, designee, elected official, or State employee suspects collusion or other anticompetitive practice among any bidders, offerors, contractors, proposers, or employees of the State, a notice of the relevant facts shall be transmitted to the Attorney General and the chief procurement officer.

2. The bidder assures the Department that it has not failed to report any relevant facts concerning the practices addressed in Section 50-40 which may involve the contract for which the bid is submitted.

H. Confidentiality

1. The Illinois Procurement Code provides:

Section 50-45. Confidentiality. Any chief procurement officer, State purchasing officer, designee, or executive officer who willfully uses or allows the use of specifications, competitive bid documents, proprietary competitive information, proposals, contracts, or selection information to compromise the fairness or integrity of the procurement, bidding, or contract process shall be subject to immediate dismissal, regardless of the Personnel code, any contract, or any collective bargaining agreement, and may in addition be subject to criminal prosecution.

2. The bidder assures the Department that it has no knowledge of any fact relevant to the practices addressed in Section 50-45 which may involve the contract for which the bid is submitted.

I. Insider Information

1. The Illinois Procurement Act provides:

Section 50-50. Insider information. It is unlawful for any current or former elected or appointed State official or State employee to knowingly use confidential information available only by virtue of that office or employment for actual or anticipated gain for themselves or another person.

2. The bidder assures the Department that it has no knowledge of any facts relevant to the practices addressed in Section 50-50 which may involve the contract for which the bid is submitted.

III. CERTIFICATIONS

A. The certifications hereinafter made by the bidder are each a material representation of fact upon which reliance is placed should the Department enter into the contract with the bidder. The Department may terminate the contract if it is later determined that the bidder rendered a false or erroneous certification, and the surety providing the performance bond shall be responsible for completion of the contract.

B. Bribery

1. The Illinois Procurement Code provides:

Section 50-5. Bribery.

(a) Prohibition. No person or business shall be awarded a contract or subcontract under this Code who:

(1) has been convicted under the laws of Illinois or any other state of bribery or attempting to bribe an officer or employee of the State of Illinois or any other state in that officer's or employee's official capacity; or

(2) has made an admission of guilt of that conduct that is a matter of record but has not been prosecuted for that conduct.

(b) Businesses. No business shall be barred from contracting with any unit of State or local government as a result of a conviction under this Section of any employee or agent of the business if the employee or agent is no longer employed by the business and:

(1) the business has been finally adjudicated not guilty; or

(2) the business demonstrates to the governmental entity with which it seeks to contract, and that entity finds that the commission of the offense was not authorized, requested, commanded, or performed by a director, officer, or high managerial agent on behalf of the business as provided in paragraph (2) of subsection (a) of Section 5-4 of the Criminal Code of 1961.

(c) Conduct on behalf of business. For purposes of this Section, when an official, agent, or employee of a business committed the bribery or attempted bribery on behalf of the business and in accordance with the direction or authorization of a responsible official of the business, the business shall be chargeable with the conduct.

(d) Certification. Every bid submitted to and contract executed by the State shall contain a certification by the contractor that the contractor is not barred from being awarded a contract or subcontract under this Section. A contractor who makes a false statement, material to the certification, commits a Class 3 felony.

2. The bidder certifies that it is not barred from being awarded a contract under Section 50.5.

C. Educational Loan

1. Section 3 of the Educational Loan Default Act provides:

§ 3. No State agency shall contract with an individual for goods or services if that individual is in default, as defined in Section 2 of this Act, on an educational loan. Any contract used by any State agency shall include a statement certifying that the individual is not in default on an educational loan as provided in this Section.

2. The bidder, if an individual as opposed to a corporation, partnership or other form of business organization, certifies that the bidder is not in default on an educational loan as provided in Section 3 of the Act.

D. Bid-Rigging/Bid Rotating

1. Section 33E-11 of the Criminal Code of 1961 provides:

§ 33E-11. (a) Every bid submitted to and public contract executed pursuant to such bid by the State or a unit of local government shall contain a certification by the prime contractor that the prime contractor is not barred from contracting with any unit of State or local government as a result of a violation of either Section 33E-3 or 33E-4 of this Article. The State and units of local government shall provide the appropriate forms for such certification.

(b) A contractor who makes a false statement, material to the certification, commits a Class 3 felony.

A violation of Section 33E-3 would be represented by a conviction of the crime of bid-rigging which, in addition to Class 3 felony sentencing, provides that any person convicted of this offense or any similar offense of any state or the United States which contains the same elements as this offense shall be barred for 5 years from the date of conviction from contracting with any unit of State or local government. No corporation shall be barred from contracting with any unit of State or local government as a result of a conviction under this Section of any employee or agent of such corporation if the employee so convicted is no longer employed by the corporation and: (1) it has been finally adjudicated not guilty or (2) if it demonstrates to the governmental entity with which it seeks to contract and that entity finds that the commission of the offense was neither authorized, requested, commanded, nor performed by a director, officer or a high managerial agent in behalf of the corporation.

A violation of Section 33E-4 would be represented by a conviction of the crime of bid-rotating which, in addition to Class 2 felony sentencing, provides that any person convicted of this offense or any similar offense of any state or the United States which contains the same elements as this offense shall be permanently barred from contracting with any unit of State or local government. No corporation shall be barred from contracting with any unit of State or local government as a result of a conviction under this Section of any employee or agent of such corporation if the employee so convicted is no longer employed by the corporation and: (1) it has been finally adjudicated not guilty or (2) if it demonstrates to the governmental entity with which it seeks to contract and that entity finds that the commission of the offense was neither authorized, requested, commanded, nor performed by a director, officer or a high managerial agent in behalf of the corporation.

2. The bidder certifies that it is not barred from contracting with the Department by reason of a violation of either Section 33E-3 or Section 33E-4.

E. International Anti-Boycott

1. Section 5 of the International Anti-Boycott Certification Act provides:

§ 5. State contracts. Every contract entered into by the State of Illinois for the manufacture, furnishing, or purchasing of supplies, material, or equipment or for the furnishing of work, labor, or services, in an amount exceeding the threshold for small purchases according to the purchasing laws of this State or $10,000.00, whichever is less, shall contain certification, as a material condition of the contract, by which the contractor agrees that neither the contractor nor any substantially-owned affiliated company is participating or shall participate in an international boycott in violation of the provisions of the U.S. Export Administration Act of 1979 or the regulations of the U.S. Department of Commerce promulgated under that Act.

2. The bidder makes the certification set forth in Section 5 of the Act.

F. Drug Free Workplace

1. The Illinois "Drug Free Workplace Act" applies to this contract and it is necessary to comply with the provisions of the "Act" if the contractor is a corporation, partnership, or other entity (including a sole proprietorship) which has 25 or more employees.

2. The bidder certifies that if awarded a contract in excess of $5,000 it will provide a drug free workplace by:

(a) Publishing a statement notifying employees that the unlawful manufacture, distribution, dispensation, possession or use of a controlled substance, including cannabis, is prohibited in the contractor's workplace; specifying the actions that will be taken against employees for violations of such prohibition; and notifying the employee that, as a condition of employment on such contract, the employee shall abide by the terms of the statement, and notify the employer of any criminal drug statute conviction for a violation occurring in the workplace no later than five (5) days after such conviction.

(b) Establishing a drug free awareness program to inform employees about the dangers of drug abuse in the workplace; the contractor's policy of maintaining a drug free workplace; any available drug counseling, rehabilitation, and employee assistance programs; and the penalties that may be imposed upon employees for drug violations.

(c) Providing a copy of the statement required by subparagraph (1) to each employee engaged in the performance of the contract and to post the statement in a prominent place in the workplace.

(d) Notifying the Department within ten (10) days after receiving notice from an employee or otherwise receiving actual notice of the conviction of an employee for a violation of any criminal drug statute occurring in the workplace.

(e) Imposing or requiring, within 30 days after receiving notice from an employee of a conviction or actual notice of such a conviction, an appropriate personnel action, up to and including termination, or the satisfactory participation in a drug abuse assistance or rehabilitation program approved by a federal, state or local health, law enforcement or other appropriate agency.

(f) Assisting employees in selecting a course of action in the event drug counseling, treatment, and rehabilitation is required and indicating that a trained referral team is in place.

(g) Making a good faith effort to continue to maintain a drug free workplace through implementation of the actions and efforts stated in this certification.

G. Debt Delinquency

1. The Illinois Procurement Code provides:

Section 50-11 and 50-12. Debt Delinquency.

The contractor or bidder certifies that it, or any affiliate, is not barred from being awarded a contract under 30 ILCS 500. Section 50-11 prohibits a person from entering into a contract with a State agency if it knows or should know that it, or any affiliate, is delinquent in the payment of any debt to the State as defined by the Debt Collection Board. Section 50-12 prohibits a person from entering into a contract with a State agency if it, or any affiliate, has failed to collect and remit Illinois Use Tax on all sales of tangible personal property into the State of Illinois in accordance with the provisions of the Illinois Use Tax Act. The contractor further acknowledges that the contracting State agency may declare the contract void if this certification is false or if the contractor, or any affiliate, is determined to be delinquent in the payment of any debt to the State during the term of the contract.

H. Sarbanes-Oxley Act of 2002

1. The Illinois Procurement Code provides:

Section 50-60(c).

The contractor certifies in accordance with 30 ILCS 500/50-10.5 that no officer, director, partner or other managerial agent of the contracting business has been convicted of a felony under the Sarbanes-Oxley Act of 2002 or a Class 3 or Class 2 felony under the Illinois Securities Law of 1953 for a period of five years prior to the date of the bid or contract. The contractor acknowledges that the contracting agency shall declare the contract void if this certification is false.

I. ADDENDA

The contractor or bidder certifies that all relevant addenda have been incorporated in to this contract. Failure to do so may cause the bid to be declared unacceptable.

J. Section 42 of the Environmental Protection Act

The contractor certifies in accordance with 30 ILCS 500/50-12 that the bidder or contractor is not barred from being awarded a contract under this Section which prohibits the bidding on or entering into contracts with the State of Illinois or a State agency by a person or business found by a court or the Pollution Control Board to have committed a willful or knowing violation of Section 42 of the Environmental Protection Act for a period of five years from the date of the order. The contractor acknowledges that the contracting agency may declare the contract void if this certification is false.

IV. DISCLOSURES

A. The disclosures hereinafter made by the bidder are each a material representation of fact upon which reliance is placed should the Department enter into the contract with the bidder. The Department may terminate the contract if it is later determined that the bidder rendered a false or erroneous disclosure, and the surety providing the performance bond shall be responsible for completion of the contract.

B. Financial Interests and Conflicts of Interest

1. Section 50-35 of the Illinois Procurement Code provides that all bids of more than $10,000 shall be accompanied by disclosure of the financial interests of the bidder. This disclosed information for the successful bidder, will be maintained as public information subject to release by request pursuant to the Freedom of Information Act.

The financial interests to be disclosed shall include ownership or distributive income share that is in excess of 5%, or an amount greater than 60% of the annual salary of the Governor, of the bidding entity or its parent entity, whichever is less, unless the contractor or bidder is a publicly traded entity subject to Federal 10K reporting, in which case it may submit its 10K disclosure in place of the prescribed disclosure. If a bidder is a privately held entity that is exempt from Federal 10K reporting, but has more than 400 shareholders, it may submit the information that Federal 10K companies are required to report, and list the names of any person or entity holding any ownership share that is in excess of 5%. The disclosure shall include the names, addresses, and dollar or proportionate share of ownership of each person making the disclosure, their instrument of ownership or beneficial relationship, and notice of any potential conflict of interest resulting from the current ownership or beneficial interest of each person making the disclosure having any of the relationships identified in Section 50-35 and on the disclosure form.

In addition, all disclosures shall indicate any other current or pending contracts, proposals, leases, or other ongoing procurement relationships the bidding entity has with any other unit of state government and shall clearly identify the unit and the contract, proposal, lease, or other relationship.

2. Disclosure Forms. Disclosure Form A is attached for use concerning the individuals meeting the above ownership or distributive share requirements. Subject individuals should be covered each by one form. In addition, a second form (Disclosure Form B) provides for the disclosure of current or pending procurement relationships with other (non-IDOT) state agencies. **The forms must be included with each bid or incorporated by reference.**

C. Disclosure Form Instructions

Form A: For bidders that have previously submitted the information requested in Form A

The Department has retained the Form A disclosures submitted by all bidders responding to these requirements for the April 24, 1998 or any subsequent letting conducted by the Department. The bidder has the option of submitting the information again or the bidder may sign the following certification statement indicating that the information previously submitted by the bidder is, as of the date of signature, current and accurate. The Certification must be signed and dated by a person who is authorized to execute contracts for the bidding company. Before signing this certification, the bidder should carefully review its prior submissions to ensure the Certification is correct. If the Bidder signs the Certification, the Bidder should proceed to Form B instructions.

CERTIFICATION STATEMENT

I have determined that the Form A disclosure information previously submitted is current and accurate, and all forms are hereby incorporated by reference in this bid. Any necessary additional forms or amendments to previously submitted forms are attached to this bid.

_____
(Bidding Company)

_____ _____
Name of Authorized Representative (type or print) Title of Authorized Representative (type or print)

_____ _____
Signature of Authorized Representative Date

Form A: For bidders who have NOT previously submitted the information requested in Form A

If the bidder is a publicly traded entity subject to Federal 10K reporting, the 10K Report may be submitted to meet the requirements of Form A. If a bidder is a privately held entity that is exempt from Federal 10K reporting, but has more than 400 shareholders, it may submit the information that Federal 10K companies are required to report, and list the names of any person or entity holding any ownership share that is in excess of 5%. If a bidder is not subject to Federal 10K reporting, the bidder must determine if any individuals are required by law to complete a financial disclosure form. To do this, the bidder should answer each of the following questions. A "YES" answer indicates Form A must be completed. If the answer to each of the following questions is "NO", then the NOT APPLICABLE STATEMENT on the second page of Form A must be signed and dated by a person that is authorized to execute contracts for the bidding company. Note: These questions are for assistance only and are not required to be completed.

1. Does anyone in your organization have a direct or beneficial ownership share of greater than 5% of the bidding entity or parent entity? YES ___ NO___
2. Does anyone in your organization have a direct or beneficial ownership share of less than 5%, but which has a value greater than $90,420.00? YES ___ NO___
3. Does anyone in your organization receive more than $90,420.00 of the bidding entity's or parent entity's distributive income? (Note: Distributive income is, for these purposes, any type of distribution of profits. An annual salary is not distributive income.) YES ___ NO __
4. Does anyone in your organization receive greater than 5% of the bidding entity's or parent entity's total distributive income, but which is less than $90,420.00? YES ___ NO __

   (Note: Only one set of forms needs to be completed per person per bid even if a specific individual would require a yes answer to more than one question.)

A "YES" answer to any of these questions requires the completion of Form A. The bidder must determine each individual in the bidding entity or the bidding entity's parent company that would cause the questions to be answered "Yes". Each form must be signed and dated by a person that is authorized to execute contracts for your organization. **Photocopied or stamped signatures are not acceptable.** The person signing can be, but does not have to be, the person for which the form is being completed. The bidder is responsible for the accuracy of any information provided.

If the answer to each of the above questions is "NO", then the NOT APPLICABLE STATEMENT on page 2 of Form A must be signed and dated by a person that is authorized to execute contracts for your company.

Form B: Identifying Other Contracts & Procurement Related Information Disclosure Form B must be completed for each bid submitted by the bidding entity. It must be signed by an individual who is authorized to execute contracts for the bidding entity. *Note: Signing the NOT APPLICABLE STATEMENT on Form A does not allow the bidder to ignore Form B. Form B must be completed, signed and dated or the bidder may be considered nonresponsive and the bid will not be accepted.*

The Bidder shall identify, by checking Yes or No on Form B, whether it has any pending contracts (including leases), bids, proposals, or other ongoing procurement relationship with any other (non-IDOT) State of Illinois agency. If "No" is checked, the bidder only needs to complete the signature box on the bottom of Form B. If "Yes" is checked, the bidder must do one of the following:

Option I: If the bidder did not submit an Affidavit of Availability to obtain authorization to bid, the bidder must list all non-IDOT State of Illinois agency pending contracts, leases, bids, proposals, and other ongoing procurement relationships. These items may be listed on Form B or on an attached sheet(s). Do not include IDOT contracts. Contracts with cities, counties, villages, etc. are not considered State of Illinois agency contracts and are not to be included. Contracts with other State of Illinois agencies such as the Department of Natural Resources or the Capital Development Board must be included. Bidders who submit Affidavits of Availability are suggested to use Option II.

Option II: If the bidder is required and has submitted an Affidavit of Availability in order to obtain authorization to bid, the bidder may write or type "See Affidavit of Availability" which indicates that the Affidavit of Availability is incorporated by reference and includes all non-IDOT State of Illinois agency pending contracts, leases, bids, proposals, and other ongoing procurement relationships. For any contracts that are not covered by the Affidavit of Availability, the bidder must identify them on Form B or on an attached sheet(s). These might be such things as leases.

D. Bidders Submitting More Than One Bid

Bidders submitting multiple bids may submit one set of forms consisting of all required Form A disclosures and one Form B for use with all bids. Please indicate in the space provided below the bid item that contains the original disclosure forms and the bid items which incorporate the forms by reference.

- The bid submitted for letting item _____ contains the Form A disclosures or Certification Statement and the Form B disclosures. The following letting items incorporate the said forms by reference:

_____

_____

RETURN WITH BID/OFFER

ILLINOIS DEPARTMENT OF TRANSPORTATION

Form A
Financial Information & Potential Conflicts of Interest Disclosure

Contractor Name		
Legal Address		
City, State, Zip		
Telephone Number	Email Address	Fax Number (if available)

Disclosure of the information contained in this Form is required by the Section 50-35 of the Illinois Procurement Code (30 ILCS 500). Vendors desiring to enter into a contract with the State of Illinois must disclose the financial information and potential conflict of interest information as specified in this Disclosure Form. This information shall become part of the publicly available contract file. This Form A must be completed for bids in excess of $10,000, and for all open-ended contracts. **A publicly traded company may submit a 10K disclosure (or equivalent if applicable) in satisfaction of the requirements set forth in Form A. See Disclosure Form Instructions.**

DISCLOSURE OF FINANCIAL INFORMATION

1. Disclosure of Financial Information. The individual named below has an interest in the BIDDER (or its parent) in terms of ownership or distributive income share in excess of 5%, or an interest which has a value of more than $90,420.00 (60% of the Governor's salary as of 7/1/01). **(Make copies of this form as necessary and attach a separate Disclosure Form A for each individual meeting these requirements)**

FOR INDIVIDUAL (type or print information)

NAME: _____

ADDRESS _____

_____

Type of ownership/distributable income share:

stock _____ sole proprietorship _____ Partnership _____ other: (explain on separate sheet):

% or $ value of ownership/distributable income share: _____

2. Disclosure of Potential Conflicts of Interest. Check "Yes" or "No" to indicate which, if any, of the following potential conflict of interest relationships apply. If the answer to any question is "Yes", please attach additional pages and describe.

(a) State employment, currently or in the previous 3 years, including contractual employment of services. Yes ___ No ___

If your answer is yes, please answer each of the following questions.

1. Are you currently an officer or employee of either the Capitol Development Board or the Illinois Toll Highway Authority? Yes ___ No ___

2. Are you currently appointed to or employed by any agency of the State of Illinois? If you are currently appointed to or employed by any agency of the State of Illinois, and your annual salary exceeds $90,420.00, (60% of the Governor's salary as of 7/1/01) provide the name the State agency for which you are employed and your annual salary. _____

_____

3. If you are currently appointed to or employed by any agency of the State of Illinois, and your annual salary exceeds $90,420.00, (60% of the Governor's salary as of 7/1/01) are you entitled to receive (i) more than 7 1/2% of the total distributable income of your firm, partnership, association or corporation, or (ii) an amount in excess of the salary of the Governor? Yes ___ No __

4. If you are currently appointed to or employed by any agency of the State of Illinois, and your annual salary exceeds $90,420.00, (60% of the Governor's salary as of 7/1/01) are you and your spouse or minor children entitled to receive (i) more than 15% in aggregate of the total distributable income of your firm, partnership, association or corporation, or (ii) an amount in excess of 2 times the salary of the Governor? Yes ___ No __

(b) State employment of spouse, father, mother, son, or daughter, including contractual employment for services in the previous 2 years.

Yes ___No __

If your answer is yes, please answer each of the following questions.

1. Is your spouse or any minor children currently an officer or employee of the Capitol Development Board or the Illinois Toll Highway Authority? Yes ___No __

2. Is your spouse or any minor children currently appointed to or employed by any agency of the State of Illinois? If your spouse or minor children is/are currently appointed to or employed by any agency of the State of Illinois, and his/her annual salary exceeds $90,420.00, (60% of the Governor's salary as of 7/1/01) provide the name of the spouse and/or minor children, the name of the State agency for which he/she is employed and his/her annual salary. _____

   _____

3. If your spouse or any minor children is/are currently appointed to or employed by any agency of the State of Illinois, and his/her annual salary exceeds $90,420.00, (60% of the salary of the Governor as of 7/1/01) are you entitled to receive (i) more than 71/2% of the total distributable income of your firm, partnership, association or corporation, or (ii) an amount in excess of the salary of the Governor? Yes ___ No __

4. If your spouse or any minor children are currently appointed to or employed by any agency of the State of Illinois, and his/her annual salary exceeds $90,420.00, (60% of the Governor's salary as of 7/1/01) are you and your spouse or any minor children entitled to receive (i) more than 15% in the aggregate of the total distributable income from your firm, partnership, association or corporation, or (ii) an amount in excess of 2 times the salary of the Governor?

   Yes ___ No __

(c) Elective status; the holding of elective office of the State of Illinois, the government of the United States, any unit of local government authorized by the Constitution of the State of Illinois or the statutes of the State of Illinois currently or in the previous 3 years. Yes ___No __

(d) Relationship to anyone holding elective office currently or in the previous 2 years; spouse, father, mother, son, or daughter. Yes ___No __

(e) Appointive office; the holding of any appointive government office of the State of Illinois, the United State of America, or any unit of local government authorized by the Constitution of the State of Illinois or the statues of the State of Illinois, which office entitles the holder to compensation in excess of the expenses incurred in the discharge of that office currently or in the previous 3 years. Yes ___No __

(f) Relationship to anyone holding appointive office currently or in the previous 2 years; spouse, father, mother, son, or daughter. Yes ___No __

(g) Employment, currently or in the previous 3 years, as or by any registered lobbyist of the State government. Yes ___No __

(h) Relationship to anyone who is or was a registered lobbyist in the previous 2 years; spouse, father, mother, son, or daughter. Yes ___No __

(i) Compensated employment, currently or in the previous 3 years, by any registered election or reelection committee registered with the Secretary of State or any county clerk of the State of Illinois, or any political action committee registered with either the Secretary of State or the Federal Board of Elections.
Yes ___ No __

(j) Relationship to anyone; spouse, father, mother, son, or daughter; who was a compensated employee in the last 2 years by any registered election or re-election committee registered with the Secretary of State or any county clerk of the State of Illinois, or any political action committee registered with either the Secretary of State or the Federal Board of Elections.
Yes ___ No __

APPLICABLE STATEMENT

This Disclosure Form A is submitted on behalf of the INDIVIDUAL named on previous page.

Completed by: _____
Name of Authorized Representative (type or print)

Completed by: _____
Title of Authorized Representative (type or print)

Completed by: _____ _____
Signature of Individual or Authorized Representative Date

NOT APPLICABLE STATEMENT

I have determined that no individuals associated with this organization meet the criteria that would require the completion of this Form A.

This Disclosure Form A is submitted on behalf of the CONTRACTOR listed on the previous page.

_____
Name of Authorized Representative (type or print)

_____
Title of Authorized Representative (type or print)

_____ _____
Signature of Authorized Representative Date

RETURN WITH BID/OFFER

ILLINOIS DEPARTMENT OF TRANSPORTATION

Form B
Other Contracts & Procurement Related Information Disclosure

Contractor Name		
Legal Address		
City, State, Zip		
Telephone Number	Email Address	Fax Number (if available)

Disclosure of the information contained in this Form is required by the Section 50-35 of the Illinois Procurement Act (30 ILCS 500). This information shall become part of the publicly available contract file. This Form B must be completed for bids in excess of $10,000, and for all open-ended contracts.

DISCLOSURE OF OTHER CONTRACTS AND PROCUREMENT RELATED INFORMATION

1. Identifying Other Contracts & Procurement Related Information. The BIDDER shall identify whether it has any pending contracts (including leases), bids, proposals, or other ongoing procurement relationship with any other State of Illinois agency: Yes ___ No __
If "No" is checked, the bidder only needs to complete the signature box on the bottom of this page.

2. If "Yes" is checked. Identify each such relationship by showing State of Illinois agency name and other descriptive information such as bid or project number (attach additional pages as necessary). SEE DISCLOSURE FORM INSTRUCTIONS:

THE FOLLOWING STATEMENT MUST BE SIGNED

_____
Name of Authorized Representative (type or print)

_____
Title of Authorized Representative (type or print)

_____ _____
Signature of Authorized Representative Date

SPECIAL NOTICE TO CONTRACTORS

The following requirements of the Illinois Department of Human Rights' Rules and Regulations are applicable to bidders on all construction contracts advertised by the Illinois Department of Transportation:

CONSTRUCTION EMPLOYEE UTILIZATION PROJECTION

(a) All bidders on construction contracts shall complete and submit, along with and as part of their bids, a Bidder's Employee Utilization Form (Form BC-1256) setting forth a projection and breakdown of the total workforce intended to be hired and/or allocated to such contract work by the bidder including a projection of minority and female employee utilization in all job classifications on the contract project.

(b) The Department of Transportation shall review the Employee Utilization Form, and workforce projections contained therein, of the contract awardee to determine if such projections reflect an underutilization of minority persons and/or women in any job classification in accordance with the Equal Employment Opportunity Clause and Section 7.2 of the Illinois Department of Human Rights' Rules and Regulations for Public Contracts adopted as amended on September 17, 1980. If it is determined that the contract awardee's projections reflect an underutilization of minority persons and/or women in any job classification, it shall be advised in writing of the manner in which it is underutilizing and such awardee shall be considered to be in breach of the contract unless, prior to commencement of work on the contract project, it submits revised satisfactory projections or an acceptable written affirmative action plan to correct such underutilization including a specific timetable geared to the completion stages of the contract.

(c) The Department of Transportation shall provide to the Department of Human Rights a copy of the contract awardee's Employee Utilization Form, a copy of any required written affirmative action plan, and any written correspondence related thereto. The Department of Human Rights may review and revise any action taken by the Department of Transportation with respect to these requirements.

RETURN WITH BID

Illinois Department of Transportation

Contract No. 83736
DUPAGE County
Section 00-00140-00-PV (Lombard)
Project M-8003(143)
Route FAU 2615 (Highland Avenue)
District 1 Construction Funds

PART I. IDENTIFICATION

Dept. Human Rights # _____ Duration of Project: _____

Name of Bidder: _____

PART II. WORKFORCE PROJECTION

A. The undersigned bidder has analyzed minority group and female populations, unemployment rates and availability of workers for the location in which this contract work is to be performed, and for the locations from which the bidder recruits employees, and hereby submits the following workforce projection including a projection for minority and female employee utilization in all job categories in the workforce to be allocated to this contract:

TABLE A

TOTAL Workforce Projection for Contract												
			MINORITY EMPLOYEES						TRAINEES			
JOB CATEGORIES	TOTAL EMPLOYEES		BLACK		HISPANIC		*OTHER MINOR.		APPREN-TICES		ON THE JOB TRAINEES	
	M	F	M	F	M	F	M	F	M	F	M	F
OFFICIALS (MANAGERS)												
SUPERVISORS												
FOREMEN												
CLERICAL												
EQUIPMENT OPERATORS												
MECHANICS												
TRUCK DRIVERS												
IRONWORKERS												
CARPENTERS												
CEMENT MASONS												
ELECTRICIANS												
PIPEFITTERS, PLUMBERS												
PAINTERS												
LABORERS, SEMI-SKILLED												
LABORERS, UNSKILLED												
TOTAL												

TABLE B

CURRENT EMPLOYEES TO BE ASSIGNED TO CONTRACT			
TOTAL EMPLOYEES		MINORITY EMPLOYEES	
M	F	M	F

TABLE C

TOTAL Training Projection for Contract								
EMPLOYEES IN TRAINING	TOTAL EMPLOYEES		BLACK		HISPANIC		*OTHER MINOR.	
	M	F	M	F	M	F	M	F
APPRENTICES								
ON THE JOB TRAINEES								

*Other minorities are defined as Asians (A) or Native Americans (N).

Please specify race of each employee shown in Other Minorities column.

FOR DEPARTMENT USE ONLY

Note: See instructions on the next page

BC 1256 - Pg 1 (Rev. 3/98)
IL 494-0454

RETURN WITH BID

Contract No. 83736
DUPAGE County
Section 00-00140-00-PV (Lombard)
Project M-8003(143)
Route FAU 2615 (Highland Avenue)
District 1 Construction Funds

PART II. WORKFORCE PROJECTION - continued

B. Included in "Total Employees" under Table A is the total number of **new hires** that would be employed in the event the undersigned bidder is awarded this contract.

The undersigned bidder projects that: (number) _____ new hires would be recruited from the area in which the contract project is located; and/or (number) _____ new hires would be recruited from the area in which the bidder's principal office or base of operation is located.

C. Included in "Total Employees" under Table A is a projection of numbers of persons to be employed directly by the undersigned bidder as well as a projection of numbers of persons to be employed by subcontractors.

The undersigned bidder estimates that (number) _____ persons will be directly employed by the prime contractor and that (number) _____ persons will be employed by subcontractors.

PART III. AFFIRMATIVE ACTION PLAN

A. The undersigned bidder understands and agrees that in the event the foregoing minority and female employee utilization projection included under **PART II** is determined to be an underutilization of minority persons or women in any job category, and in the event that the undersigned bidder is awarded this contract, he/she will, prior to commencement of work, develop and submit a written Affirmative Action Plan including a specific timetable (geared to the completion stages of the contract) whereby deficiencies in minority and/or female employee utilization are corrected. Such Affirmative Action Plan will be subject to approval by the contracting agency and the **Department of Human Rights**.

B. The undersigned bidder understands and agrees that the minority and female employee utilization projection submitted herein, and the goals and timetable included under an Affirmative Action Plan if required, are deemed to be part of the contract specifications.

Company _____ Telephone Number _____

_____

Address _____

NOTICE REGARDING SIGNATURE

The Bidder's signature on the Proposal Signature Sheet will constitute the signing of this form. The following signature block needs to be completed only if revisions are required.

Signature: _____ Title: _____ Date: _____

Instructions: All tables must include subcontractor personnel in addition to prime contractor personnel.

Table A - Include both the number of employees that would be hired to perform the contract work and the total number currently employed (Table B) that will be allocated to contract work, and include all apprentices and on-the-job trainees. The "Total Employees" column should include all employees including all minorities, apprentices and on-the-job trainees to be employed on the contract work.

Table B - Include all employees currently employed that will be allocated to the contract work including any apprentices and on-the-job trainees currently employed.

Table C - Indicate the racial breakdown of the total apprentices and on-the-job trainees shown in Table A.

ADDITIONAL FEDERAL REQUIREMENTS

In addition to the Required Contract Provisions for Federal-Aid Construction Contracts (FHWA 1273), all bidders make the following certifications.

A. By the execution of this proposal, the signing bidder certifies that the bidding entity has not, either directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken any action, in restraint of free competitive bidding in connection with the submitted bid. This statement made by the undersigned bidder is true and correct under penalty of perjury under the laws of the United States.

B. CERTIFICATION, EQUAL EMPLOYMENT OPPORTUNITY:

1. Have you participated in any previous contracts or subcontracts subject to the equal opportunity clause. YES _____ NO _____

2. If answer to #1 is yes, have you filed with the Joint Reporting Committee, the Director of OFCC, any Federal agency, or the former President's Committee on Equal Employment Opportunity, all reports due under the applicable filing requirements of those organizations? YES _____ NO _____

RETURN WITH BID

Contract No. 83736
DUPAGE County
Section 00-00140-00-PV (Lombard)
Project M-8003(143)
Route FAU 2615 (Highland Avenue)
District 1 Construction Funds

PROPOSAL SIGNATURE SHEET

The undersigned bidder hereby makes and submits this bid on the subject Proposal, thereby assuring the Department that all requirements of the Invitation for Bids and rules of the Department have been met, that there is no misunderstanding of the requirements of paragraph 3 of this Proposal, and that the contract will be executed in accordance with the rules of the Department if an award is made on this bid.

(IF AN INDIVIDUAL)

Firm Name _____

Signature of Owner _____

Business Address _____

_____

(IF A CO-PARTNERSHIP)

Firm Name _____

By _____

Business Address _____

_____

Name and Address of All Members of the Firm:

_____ _____

_____ _____

(IF A CORPORATION)

Corporate Name _____

By _____
Signature of Authorized Representative

_____
Typed or printed name and title of Authorized Representative

Attest _____
Signature

(IF A JOINT VENTURE, USE THIS SECTION FOR THE MANAGING PARTY AND THE SECOND PARTY SHOULD SIGN BELOW)

Business Address _____

_____

(IF A JOINT VENTURE)

Corporate Name _____

By _____
Signature of Authorized Representative

_____
Typed or printed name and title of Authorized Representative

Attest _____
Signature

Business Address _____

_____

If more than two parties are in the joint venture, please attach an additional signature sheet.

RETURN WITH BID

Illinois Department of Transportation

Division of Highways
Proposal Bid Bond
(Effective November 1, 1992)

Item No. _____
Letting Date _____

KNOW ALL MEN BY THESE PRESENTS, That We _____

_____

as PRINCIPAL, and _____

_____ as SURETY, are held jointly, severally and firmly bound unto the STATE OF ILLINOIS in the penal sum of 5 percent of the total bid price, or for the amount specified in Article 102.09 of the "Standard Specifications for Road and Bridge Construction" in effect on the date of invitation for bids, whichever is the lesser sum, well and truly to be paid unto said STATE OF ILLINOIS, for the payment of which we bind ourselves, our heirs, executors, administrators, successors and assigns.

THE CONDITION OF THE FOREGOING OBLIGATION IS SUCH, That Whereas, the PRINCIPAL has submitted a bid proposal to the STATE OF ILLINOIS, acting through the Department of Transportation, for the improvement designated by the Transportation Bulletin Item Number and Letting Date indicated above.

NOW, THEREFORE, if the Department shall accept the bid proposal of the PRINCIPAL; and if the PRINCIPAL shall, within the time and as specified in the bidding and contract documents, submit a DBE Utilization Plan that is accepted and approved by the Department; and if, after award by the Department, the PRINCIPAL shall enter into a contract in accordance with the terms of the bidding and contract documents including evidence of the required insurance coverages and providing such bond as specified with good and sufficient surety for the faithful performance of such contract and for the prompt payment of labor and material furnished in the prosecution thereof; or if, in the event of the failure of the PRINCIPAL to make the required DBE submission or to enter into such contract and to give the specified bond, the PRINCIPAL pays to the Department the difference not to exceed the penalty hereof between the amount specified in the bid proposal and such larger amount for which the Department may contract with another party to perform the work covered by said bid proposal, then this obligation shall be null and void, otherwise, it shall remain in full force and effect.

IN THE EVENT the Department determines the PRINCIPAL has failed to comply with any requirement as set forth in the preceding paragraph, then Surety shall pay the penal sum to the Department within fifteen (15) days of written demand therefor. If Surety does not make full payment within such period of time, the Department may bring an action to collect the amount owed. Surety is liable to the Department for all its expenses, including attorney's fees, incurred in any litigation in which it prevails either in whole or in part.

In TESTIMONY WHEREOF, the said PRINCIPAL and the said SURETY have caused this instrument to be signed by their respective officers this _____ day of _____ A.D., _____.

PRINCIPAL

_____
(Company Name)

By: _____
(Signature & Title)

SURETY

_____
(Company Name)

By: _____
(Signature of Attorney-in-Fact)

Notary Certification for Principal and Surety

STATE OF ILLINOIS,
COUNTY OF _____

I, _____, a Notary Public in and for said County, do hereby certify that

_____ and _____

(Insert names of individuals signing on behalf of PRINCIPAL & SURETY)

who are each personally known to me to be the same persons whose names are subscribed to the foregoing instrument on behalf of PRINCIPAL and SURETY, appeared before me this day in person and acknowledged respectively, that they signed and delivered said instrument as their free and voluntary act for the uses and purposes therein set forth.

Given under my hand and notarial seal this _____ day of _____, A.D. _____.

My commission expires _____ _____
Notary Public

In lieu of completing the above section of the Proposal Bid Form, the Principal may file an Electronic Bid Bond. By signing below the Principal is ensuring the identified electronic bid bond has been executed and the Principal and Surety are firmly bound unto the State of Illinois under the conditions of the bid bond as shown above.

_____ _____ _____
Electronic Bid Bond ID# Company/Bidder Name Signature and Title

BD 356 (Rev. 2000)

PROPOSAL ENVELOPE

Illinois Department of Transportation

PROPOSALS

for construction work advertised for bids by the
Illinois Department of Transportation

Item No.	Item No.	Item No.

Submitted By:

Name:
Address:
Phone No.

Bidders should use an IDOT proposal envelope or affix this form to the front of a 10" x 13" envelope for the submittal of bids. If proposals are mailed, they should be enclosed in a second or outer envelope addressed to:

Engineer of Design and Environment - Room 323
Illinois Department of Transportation
2300 South Dirksen Parkway
Springfield, Illinois 62764

NOTICE

Individual bids, including Bid Bond and/or supplemental information if required, should be securely stapled.

CONTRACTOR OFFICE COPY OF CONTRACT SPECIFICATIONS

NOTICE

None of the following material needs to be returned with the bid package unless the special provisions require documentation and/or other information to be submitted.

Contract No. 83736
DUPAGE County
Section 00-00140-00-PV (Lombard)
Project M-8003(143)
Route FAU 2615 (Highland Avenue)
District 1 Construction Funds

Illinois Department of Transportation

Illinois Department of Transportation

NOTICE TO BIDDERS

1. **TIME AND PLACE OF OPENING BIDS.** Sealed proposals for the improvement described herein will be received by the Department of Transportation at the Harry R. Hanley Building, 2300 South Dirksen Parkway, in Springfield, Illinois until 10:00 o'clock a.m., March 5, 2004. All bids will be gathered, sorted, publicly opened and read in the auditorium at the Department of Transportation's Harry R. Hanley Building shortly after the 10:00 a.m. cut off time.

2. **DESCRIPTION OF WORK.** The proposed improvement is identified and advertised for bids in the Invitation for Bids as:

   Contract No. 83736
   DUPAGE County
   Section 00-00140-00-PV (Lombard)
   Project M-8003(143)
   Route FAU 2615 (Highland Avenue)
   District 1 Construction Funds

0.60 mile of roadway reconstruction to include new curb and gutter, concrete median, sidewalk, retaining walls, modernizing three existing traffic signals with video detection, storm sewers and water main construction from Illinois Route 56 to 22nd Street in Lombard.

3. **INSTRUCTIONS TO BIDDERS.** (a) This Notice, the invitation for bids, proposal and letter of award shall, together with all other documents in accordance with Article 101.09 of the Standard Specifications for Road and Bridge Construction, become part of the contract. Bidders are cautioned to read and examine carefully all documents, to make all required inspections, and to inquire or seek explanation of the same prior to submission of a bid.

   (b) State law, and, if the work is to be paid wholly or in part with Federal-aid funds, Federal law requires the bidder to make various certifications as a part of the proposal and contract. By execution and submission of the proposal, the bidder makes the certification contained therein. A false or fraudulent certification shall, in addition to all other remedies provided by law, be a breach of contract and may result in termination of the contract.

4. **AWARD CRITERIA AND REJECTION OF BIDS.** This contract will be awarded to the lowest responsive and responsible bidder considering conformity with the terms and conditions established by the Department in the rules, Invitation for Bids and contract documents. The issuance of plans and proposal forms for bidding based upon a prequalification rating shall not be the sole determinant of responsibility. The Department reserves the right to determine responsibility at the time of award, to reject any or all proposals, to readvertise the proposed improvement, and to waive technicalities.

By Order of the
Illinois Department of Transportation

Timothy W. Martin, Secretary

BD 351 (Rev. 01/2003)

CHECKSHEET
FOR
SUPPLEMENTAL SPECIFICATIONS
AND RECURRING SPECIAL PROVISIONS

Adopted January 1, 2004

This sheet contains a listing of the ERRATA, and SUPPLEMENTAL SPECIFICATIONS, frequently used RECURRING SPECIAL PROVISIONS and RECURRING LOCAL ROADS AND STREETS SPECIAL PROVISIONS.

SUPPLEMENTAL SPECIFICATIONS

The following RECURRING SPECIAL PROVISIONS and RECURRING LOCAL ROADS AND STREETS SPECIAL PROVISIONS indicated by an "X" are applicable to this contract and are included by reference:

RECURRING SPECIAL PROVISIONS

RECURRING LOCAL ROADS AND STREETS SPECIAL PROVISIONS

INDEX OF SPECIAL PROVISIONS

INDEX LOCAL ROADS AND STREETS SPECIAL PROVISIONS

INDEX INTERIM SPECIAL PROVISIONS

INDEX INTERIM SPECIAL PROVISIONS (CONT'D)

INDEX INTERIM SPECIAL PROVISIONS (CONT'D)

INDEX INTERIM SPECIAL PROVISIONS (CONT'D)

STATE OF ILLINOIS

SPECIAL PROVISIONS

The following Special Provisions supplement the "Standard Specifications for Road and Bridge Construction," adopted January 1, 2002, the "Supplemental Specifications and Recurring Special Provisions", adopted January 1, 2004, the latest edition of the "Manual on Uniform Traffic Control Devices for Streets and Highways", the "Manual of Test Procedures for Materials" in effect on the date of invitation for bids, the "Standard Specifications for Water and Sewer Main Construction in Illinois", Fifth Edition, adopted May 1996, and the Supplemental Specifications and Recurring Special Provisions indicated on the Check Sheet included herein which apply to and govern the construction of FAU Route 2615 (Highland Avenue), Section 00-00140-00-PV, Project No. M-8003(143) in Lombard, DuPage County, and in case of conflict with any part, or parts, of said specifications, the said Special Provisions shall take precedence and shall govern.

HIGHLAND AVENUE

LOCATION OF PROJECT

The project is located in DuPage County in the southern portion of the Village of Lombard. The project limits are 200' north of Illinois Route 56 (Butterfield Road) north to 22nd Street. The project is 3,187 lineal feet (0.6 miles) in length.

DESCRIPTION OF PROJECT

Work to be performed under this contract shall consist of the roadway reconstruction including the removal of pavement, curb and gutter, concrete median, sidewalk and driveways and the construction of concrete pavement, curb and gutter, concrete median, sidewalk, driveways and retaining walls. Three existing traffic signals will be modernized with video detection and interconnect system. The contract also included storm sewer, water main, pavement markings, pavement markers, restoration and all incidental and collateral work necessary to complete the improvements shown on the plans and described herein.

MAINTENANCE OF ROADWAYS

Beginning on the date that the Contractor begins work on this project, he shall assume responsibility for normal maintenance of all existing roadways within the limits of the improvement. This normal maintenance shall include all repair work deemed necessary by the Engineer, but shall not include snow removal operations. Traffic Control and Protection for this work will be provided by the Contractor as required by the Engineer.

The work involved in maintaining the existing pavement and shoulders will not be paid for separately but shall be considered included to the contract unit prices for the various items of work involved, unless such item(s) of work have been provided for in the contract or otherwise specified for payment.

If items of work have not been provided for in the contract, or otherwise specified for payment, such items, including the accompanying Traffic Control and Protection required by the Engineer, will be paid for in accordance with Article 109.04 of the Standard Specifications.

COMPLETION DATE

The contractor shall complete all contract items and safely open all roadways to traffic by 6:00 am on November 1, 2004 except for the following. The contractor will be allowed to complete all clean-up work and punch list items within 5 working days after the completion date for opening the roadway to traffic.

Under extenuating circumstances and upon written request of the Contractor, the Village may direct that certain items of work not affecting the safe opening of the roadway to traffic may be completed at a later date. The Village will determine dates by which the work shall be completed. Any additional costs to complete this work shall be borne by the contractor.

Article 108.09 of the Standard Specifications for Failure to Complete the Work on Time shall apply to both the completion date and the number of working days.

If all contract items are completed and the roadway has been safely opened to traffic prior to November 1, 2004 the contractor shall receive an incentive payment of $1,500 per day for a maximum of 20 days.

The Contractor's unit prices shall include costs for multiple crews and equipment. No additional compensation will be in order to meet the completion date.

SECTION 101. DEFINITION OF TERMS Rev. 04/03

Add the following articles to this section:

101.56 Village. The Village of Lombard, DuPage County, Illinois.

101.57 Water and Sewer Specifications. The "Standard Specifications for Water and Sewer Main Construction in Illinois", Fifth Edition, adopted May 1996, available from the Associated General Contractors of Illinois or the Illinois Society of Professional Engineers.

SECTION 104. SCOPE OF WORK REV. 01/03

104.01 Intent of the Contract. Add the following: Any work not specified on the plans or herein which may be implied as being included in this Contract, of which the Engineer shall be the judge, shall be done by the Contractor without extra charge.

104.02 Alterations, Cancellations, Extensions and Deductions. Delete paragraph four and subparagraphs b and d of paragraph six.

104.07 Value Engineering Proposals. Delete this article in its entirety.

SECTION 105. CONTROL OF WORK REV. 02/02

105.12 Inspection of Work. Add the following: Any failure by the Village to reject or condemn any work or material at the time of its construction or arrival at the worksite shall not be construed to mean an acceptance of the work.

105.13 Final Inspection. Add the following: Periodic inspections of the work will be made. The Contractor shall correct work to the satisfaction of the Engineer, which may be in satisfactory condition at the time of a periodic inspection but is found to be unsatisfactory at the time of final inspection.

SECTION 106. CONTROL OF MATERIALS REV. 01/03

106.02 Unacceptable Materials. Add the following: The Village hereby reserves the right to approve as an equal, or to reject as not being an equal, any article the Contractor proposes to furnish under the terms of the Contract. All proposed substitutions shall be submitted to the Engineer for review and approval prior to their delivery to the worksite.

SECTION 107. LEGAL REGULATIONS AND RESPONSIBILITY TO PUBLIC REV. 12/03

107.09 Public Convenience and Safety. Add the following: The Village water division shall be notified at least forty-eight (48) hours in advance of any water shutdown. The Village will determine the limits of the shutdown and which residences will be affected and supply the Contractor with shut-off notice handouts. The Contractor shall be responsible for distributing handouts to affected residences a minimum of twenty-four (24) hours in advance of the shutdown. Water division personnel shall operate all valves other than those installed but not yet accepted by the Village. The maximum time allowed for a water shutdown will be four (4) hours.

107.15 Dirt on Pavement or Structures. Add the following: If the pavement on or adjacent to the section under construction shall need cleaning because of the Contractor's operation and the Contractor fails to clean the pavement to the satisfaction of the Engineer at any time during the duration of the Contract, the Engineer will notify the Contractor, at which time the Contractor will have twenty-four (24) hours in which to perform the cleaning. If the Contractor fails to perform the required cleaning within this period of time, the Village shall contract the cleaning to be performed by whatever such method they feel necessary. At the time such work has been completed, the amount incurred by the Village for such work along with a $500.00 per incident fine will be deducted from monies due, or that may become due, the Contractor.

107.16 Equipment on Pavement and Structures. Add the following: In accordance with Village Code (Title 9, Chapter 97, Section 97.200) the Contractor must obtain a permit for the movement of any overweight or oversize vehicle within the jurisdiction of the Village. If any of the following limits are exceeded, a permit is required.

Maximum Gross Weight:	***73,280 pounds***
Maximum Gross Length:	***60 feet***
Maximum Gross Width:	***8 feet 6 inches***
Maximum Gross Height:	***13 feet 6 inches***
Maximum Axle Weight Limit	***18,000 pounds***
Maximum Axle Tandem Weight Limit	***32,000 pounds***

The Contractor must be familiar with the ordinance. Copies of the ordinance are available at Department of Public Works or the Police Department. Specific questions concerning the movement of overweight or overdimension vehicles through the jurisdictional limits of the Village should be addressed to the Village of Lombard, Police Department, Traffic Unit, 235 E. Wilson Ave., Lombard, IL 60148, (630) 620-5955.
This ordinance is strictly enforced; offenders will be subject to fine, arrest and prosecution.

107.18 Use of Fire Hydrants. Add the following: The Contractor may request to use fire hydrants within the project area. Fire hydrant usage will only be allowed after the Contractor receives authorization from the Village. Prior to drawing water from any fire hydrant, the Contractor shall rent a water meter and RPZ valve from the Village. The meter

and RPZ valve must be connected to the fire hydrant while it is in use. The current billing rate (effective to May 31, 2004) is $5.44 per thousand gallons. Fees and water rates are subject to change after June 1, 2004. Contractors renting meters and using water after May 31, 2004 will be billed at the rate in effect for the period of June 1, 2004 to May 31, 2005. **Meter rentals must be returned after 90 days**. Meters may be renewed after 90 days, however rental and usage fees at the time of renewal will be charged. Meter renewals will require a new deposit and a renewal fee. The Village will refund any balance from the water usage and daily rental fee incurred during the 90-day rental period.

Billing rates and fees are listed below.

Water Meter Rental and Water Usage Charges

5/8" or 3/4" Meter

Initial Administration Fee	$40.00
Deposit	$500.00
Meter Rental Fee (per day)	$3.00
Cost of Water (per 1000 gallons)	$5.44
Maximum Rental Time	90 days
Renewal Fee	$10.00

2" Meter

Initial Administration Fee	$40.00
Deposit	$2,000.00
Meter Rental Fee (per day)	$5.00
Cost of Water (per 1000 gallons)	$5.44
Maximum Rental Time	90 days
Renewal Fee	$10.00

Contractors wishing to rent a water meter should contact the Department of Public Works at 630.620.5740. The Finance Department will deduct the water meter rental fee and water usage from the deposit.

Unauthorized or improper use will subject the offender to arrest and prosecution.

107.24 Forest Protection. Add the following: The Contractor shall attend the showing of a videotape regarding tree protection during construction. The videotape will be shown at the Public Works Building. The approximate time required to view the videotape is one (1) hour. The videotape shall be viewed before any excavation begins. The Engineer will arrange a time suitable to all parties involved to view the videotape. This work will not be paid for separately, but shall be considered incidental to the Contract. The Contractor shall also protect parkway trees from damage by their operations. Failure to do so will result in the following deductions from monies owed to the Contractor:

DAMAGE TO PARKWAY TREES CAUSING REMOVAL (PAYMENT): Any person that damages a parkway tree so severely that the tree dies or requires removal shall compensate the Village for the loss of the parkway tree. The amount paid shall be based on the following schedule:

1. If the damaged parkway tree is less than 8 in. in diameter (measured at 12 in. above ground level), the amount paid shall be determined by using the "Replacement Cost Method" of evaluating trees found in the most current

edition of the *Council of Tree and Landscape Appraisers Guide (CTLA) for Plant Appraisal.*

2. For parkway trees larger than an 8 in. trunk diameter, (measured at 52 in. above grade) the amount paid shall be determined by using the "Trunk Formula Method" of evaluating trees found in the most current edition of the above-referenced *CTLA*'s Guide.
3. Added to the costs established under the above provisions shall be the cost of the removal of the parkway tree.

DAMAGE TO PARKWAY TREES NOT CAUSING REMOVAL (PAYMENT): Any person that causes injury to a parkway tree shall compensate the Village for the injury to the parkway tree. Such injuries include, but are not limited to the following: damage to the tree trunk, broken branches, and the storing of construction materials within the drip-line of the tree. The amount paid shall be the actual cost to repair the damage.

The Forestry Division using the most current edition of the above-referenced CTLA's Guide shall determine the appraised value or the partial loss in the tree value.

The following is a SAMPLE of both methods of evaluating parkway trees:

REPLACEMENT COST METHOD (TREES UNDER 8" DIAMETER):	
2" AUTUMN BLAZE FREEMAN MAPLE -	$ 215.00
2" HORSECHESTNUT -	$ 235.00
2" SWAMP WHITE OAK -	$ 220.00
2" RED OAK -	$ 220.00
2" HEDGE MAPLE -	$ 220.00
2" IVORY SILK JAPANESE TREE-LILAC -	$ 235.00

TRUNK FORMULA METHOD (TREES OVER 8" DIAMETER):	
10" HONEY LOCUST -	$ 1,595.00
15" LITTLE-LEAF LINDEN -	$ 2,662.00
18" SUGAR MAPLE -	$ 4,240.00
19" GREEN ASH -	$ 4,708.00
30" SILVER MAPLE -	$ 7,331.00
32" GREEN ASH -	$12,853.00

107.26 Indemnification. In lieu of the first paragraph of Article 107.26 insert the following: The Contractor shall indemnify, defend and save harmless the Village, its officers, agents, employees, representatives and assigns, from lawsuits, actions, costs (including attorneys' fees), claims or liabilities of any character, including, as allowed by law, liabilities incurred due to joint negligence of the Village and the Contractor, brought because of any injuries or damages received or sustained by any person, persons, or property on account of any act or omission, neglect or misconduct of said Contractor, its officers, agents and/or employees arising out of, or in performance of any of the provisions of the Contract, including any claims or amounts recovered for any infringements of patent, trademark or copyright; or from any claims or amounts arising or recovered under the "Worker's Compensation Act" or any other law, ordinance, order or decree. In connection with any such claims, lawsuits, actions or liabilities, the Village, its officers, agents, employees, representatives and their assigns shall have the right to defense counsel of their choice. The Contractor shall be

solely liable for all costs of such defense and for all expenses, fees, judgments, settlements and all other costs arising out of such claims, lawsuits, actions or liabilities.

107.27 Insurance. In lieu of the first sentence of the third paragraph of Article 107.27 insert the following: The Contractor shall furnish to the Village satisfactory proof of coverage of the above insurance requirements, by a reliable company or companies, before commencing any work. Such proof shall consist of certificates executed by the respective insurance companies and filed with the Village. Said certificates shall contain a clause to the effect that, for the duration of the Contract, the insurance policy shall not be canceled, expired or changed as to the amount of coverage without written notification thirty (30) days in advance to the Village. **In addition, said certificates shall list the Village and its officers, agents and employees as additional insureds on all required insurance policies.**

In addition to the language set forth in Article 107.27, add the following:
The Contractor shall require subcontractors, if any, not protected under the Contractor's policies, to secure and maintain insurance of the same nature in amounts, and under the same terms, as required of the Contractor.

107.28 Contractor Safety Responsibility. Add the following: The Contractor shall read and comply with all applicable Occupational Safety and Health Act (OSHA) standards. Special attention is directed to the Congressional Federal Register, Volume 58, Number 9, Thursday, January 14, 1993, Part 1910 (Permit Required Confined Spaces for General Industry) and 29CFR1926.650-652, Appendices A-F, Revised July 1, 1990 (Subpart P - Excavations). Equipment supplied to the Village must comply with all requirements and standards as specified by the OSHA. Items not meeting any OSHA specifications will be refused.

107.30 Contractor's Responsibility for Work. Add the following: The Contractor is required to maintain all work including but not limited to; roadway, driveway, sidewalk, lighting, traffic signals, landscaping, water and sewer mains and structures until final acceptance by the Engineer. The Engineer will determine what constitutes acceptable maintenance. Any defaced work shall be corrected or replaced by the Contractor at its sole expense prior to final payment. The Village will cooperate with the Contractor to minimize vandalism, but the Contractor is ultimately responsible for any damages. After new water service lines have been installed, the Contractor shall be responsible for locating said service lines for the duration of the project. The Village will not locate service lines placed by the Contractor for the duration of the project. The Contractor, at its own expense, shall repair any damage to any service line installed under the contract which was damaged as a result of the Contractor's failure to properly locate the service lines to the satisfaction of the Engineer.

107.35 Construction Noise Restrictions. This article is modified as follows: Confined periods shall be: 7:00 A.M. to 6:00 P.M. weekdays, 7:00 A.M. to 4:00 P.M. Saturdays and no work on Sundays or Holidays. Work outside these periods must have the prior, written permission of the Village Engineer. Muffling devices shall comply with the Village of Lombard, Code of Ordinances.

107.36 Dust Control. Delete the last sentence and replace with the following: Dust Control, will be paid for as specified elsewhere herein.

107.39 Non-Discrimination. The Contractor shall, as a party to a public contract:

1. Refrain from unlawful discrimination in employment and undertake affirmative action to assure equality of employment opportunity and eliminate the effects of past discrimination;
2. By submission of this proposal, the Contractor certifies that it is an "equal opportunity employer" as defined by Section 2000 (e) of Chapter 21, Title 42, U.S. Code Annotated and Executive Orders #11246 and #11375 (42 U.S.C., Section 2000 (e)); Exec. Order No. 11246, 30 F.R. 12319 (1965); Exec. Order No. 11375, 32 F.R. 14303 (1967) which are incorporated herein by reference. The Equal Opportunity Clause, Section 6.1 of the Rules and Regulations of the Department of Human Rights of the State of Illinois, is a material part of any contract awarded on the basis of this proposal.

It is unlawful to discriminate on the basis of race, color, sex, national origin, ancestry, age, marital status, physical or mental handicap or unfavorable discharge for military service. The Bidder shall comply with standards set forth in Title VII of the Civil Rights Act of 1964, 42 U.S.C. S2000 et seq. and The Human Rights Act of the State of Illinois (775 ILCS 5/1 – 101 et seq.).

107.40 Venue. The parties hereto agree that for purposes of any lawsuit(s) between them concerning the Contract, its enforcement, or the subject matter thereof, venue shall be in DuPage County, Illinois, and the laws of the State of Illinois shall govern the cause of action.

107.41 Warranty. The Contractor warrants to the Village that materials and equipment furnished under the Contract will be of good quality and new and that the work will be free from defects in material and workmanship for one (1) year from the date of issuance of the final payment by the Village and any deficiencies shall be corrected by the Contractor under this warranty immediately upon notification from the Village.

SECTION 207. POROUS GRANULAR EMBANKMENT REV. 01/02

This work shall be performed in accordance with Section 207 of the Standard Specifications with the following alterations.

207.02 Materials. Materials shall meet the following requirements:

Porous Granular Embankment - Subgrade (PGE-S)		
Sieve No.	Crushed Stone, Crushed Concrete or Blast Furnace Slag	Gravel, Crushed Gravel or Pit-Run Gravel
	Percent Passing	Percent Passing
4-inch	90±10	90±10
2-inch	45±25	55±25
4	-	30±20
200	5±5	5±5

Certain pit-run sand and gravel materials meeting these specifications may be unstable, therefore a sample of the proposed PGE-S shall be submitted to the Engineer for approval prior to its use.

207.05 Basis of Payment. This work will be paid for at the contract unit price per cubic meter (cubic yard) for POROUS GRANULAR EMBANKMENT, SPECIAL, which price shall all items of work included in Section 207.

SECTION 208. TRENCH BACKFILL REV. 01/03

This work shall be performed in accordance with Section 208 of the Standard Specifications with the following alterations.

208.02 Materials. Materials shall meet the requirements for CA-6 listed in Article 1004.01.

Add the following:
Construction Requirements. Backfilling methods 2 and 3 listed in Article 550.07 will not be allowed. Backfilling Method 3 will only be allowed with prior approval from the ENGINEER.

208.03 Method of Measurement. Delete the second paragraph of Article 208.03(b).

208.04 Basis of Payment. Add ", SPECIAL" after the words "TRENCH BACKFILL".

SECTION 213. EXPLORATION TRENCH REV. 01/03

This work shall be performed in accordance with Section 213 of the Standard Specifications with the following alterations.

213.01 Description. Delete paragraph one and replace with "This item shall consist of constructing a trench for the purpose of locating existing farm underdrains or other underground facilities within the limits of the proposed improvement."

213.02 General. Add the following to paragraph 2: The trench shall be deep enough to allow proper investigation of the entire trench but not more than 1 ft deeper than the proposed pipe or structure.

Replace paragraph 4 with the following: The exploration trench shall be backfilled with CA-6 the cost of which shall be included in the item of Exploration Trench.

213.04 Basis of Payment. Replace the entire article with the following. This work will be paid for at the contract unit price per meter (foot) for EXPLORATION TRENCH, SPECIAL regardless of the depth required, which price shall include all labor, equipment and materials to complete the work as specified herein.

SECTION 252. SODDING REV. 03/02

This work shall be performed in accordance with Sections 252 of the Standard Specifications with the following alterations.

252.12 Method of Measurement. Delete paragraph 4.

252.13 Basis of Payment. Delete paragraph 3 and replace with:
Fertilizer will not be paid for separately but shall be included in the cost for SODDING, SPECIAL.

SECTION 408. INCIDENTAL BITUMINOUS SURFACING

Description. This work shall consist of the removal of existing pavement and installation of Bituminous Concrete Surface Course, Superpave, Mix C, N50 over temporary utility trenches, over Aggregate of Temporary Access and in parking lots. The locations shall be directed by the Engineer. The material placed for temporary access shall be removed and disposed of at the direction of the Engineer when it is no longer needed.

Construction Requirements. This work shall be completed in accordance with ISP 04-16 and 04-17 and Section 440 of the Standard Specifications. The depth of the bituminous materials shall match that of the existing pavement or a minimum of 4" whichever is greater. Compaction methods shall be approved by the Engineer.

Measurement and Payment. This work will be measured and paid for by the ton for INCIDENTAL BITUMINOUS SURFACING which price shall include the cost of all labor, materials and equipment necessary to remove the existing pavement, install the bituminous materials and dispose of the bituminous materials, to the satisfaction of the Engineer.

SECTION 423. PORTLAND CEMENT CONCRETE DRIVEWAY PAVEMENT REV. 05/03

This work shall be performed in accordance with Section 423 and 351 of the Standard Specifications with the following alterations.

Add the following:
Construction Requirements. Drives shall consist of a minimum of, 6 in. for residential and 8 in. for commercial, Class PV concrete placed on 2 in. of Aggregate Base Course, Type B. All required excavation and saw cutting shall be included and shall not be paid for separately.

423.03 Basis of Payment. This work will be paid for at the contract unit price per square meter (square yard) for PORTLAND CEMENT CONCRETE DRIVEWAY PAVEMENT, SPECIAL of the thickness specified, which price shall include all required materials (including base course), labor and equipment necessary to complete the work as specified herein.

SECTION 424. PORTLAND CEMENT CONCRETE SIDEWALK REV. 05/03

This work shall be performed in accordance with Section 424 and 311 of the Standard Specifications with the following alterations.

424.04 Subgrade Preparation. Sidewalks shall be placed on a minimum of 2 in. of subbase granular material, type B.

424.06 Placing and Finishing. Add the following: At driveway apron locations, the depth of concrete shall be increased to 6 in. for residential drives and 8 in. for commercial drives.

424.07 Expansion Joints. In subsection (b), Change "30 m (100 ft)" to "15 m (50 ft)".

424.12 Basis of Payment. This work will be paid for at the contract unit price per square meter (square foot) for PORTLAND CEMENT CONCRETE SIDEWALK, SPECIAL, which price shall include all required expansion joints, special texturing, variable height edge treatment at sidewalk ramps, additional thickness at driveway aprons, and compacted subbase granular material.

Where existing sidewalk is to be replaced, all removal and excavation will be paid for as SIDEWALK REMOVAL. Where new sidewalk is to be placed, excavation for will be paid for as EARTH EXCAVATION.

SECTION 561. WATER MAIN REV. 01/02

This work shall be performed in accordance with Section 561 of the Standard Specifications and Section 41 of the Water and Sewer Specifications with the following alterations.

561.01 Description. This work shall also consist of adjusting existing water mains where they are in conflict with new improvements. All adjustment in the line or grade of the existing water main shall be approved by the Engineer.

561.02 Materials. Water mains and fittings shall be Class 52 ductile iron, cement lined, with push-on joints conforming to AWWA Standards C104, C111, C150, C151, and C600. Polyethylene encasement shall be manufactured in accordance with ASTM D1248 size and strength as specified in AWWA C105.

561.03 General. Add the following:

(d) All main and fittings shall be wrapped with polyethylene film. The film shall overlap a minimum of 24 in. at all seams. All seams shall be secured by waterproof tape. The water main shall be re-wrapped water tight after it has been removed or damaged during the installation of services, lateral connections, etc.

(e) All mechanical joint fittings shall be installed with "cor ten" bolts.

(f) A canvas strap shall be used to lift the main after it has been wrapped.

(g) The first two joints beyond any valve, bend, cross or tee shall be restrained with Lok-Ring Joints by American Cast Iron Pipe, TR-Flex or Field-Lok by U.S. Pipe, Mega Lugs by EBAA Iron, or approved equal.

(h) Adjusting Water Main. All materials, labor, and equipment necessary to adjust the water main shall be on hand before shutdown and cutting of the existing main. The Contractor shall take every precaution to hold the interruption of service to a minimum. A minimum clearance of 18 in. shall be maintained between the adjusted main and improvement for which the adjustment was made. A downward adjustment will be required unless 5.5 ft of cover can be maintained for an upward adjustment or as approved by the Engineer. Adequate precautions shall be taken to prevent contaminants from entering the existing main. The inside surface of all new materials used in the adjustment shall be cleaned of all foreign materials and swabbed with a solution of efficient bactericide before assembly. The adjusted section shall then be flushed with potable water. Thrust blocking of Class SI concrete shall be placed where necessary and as directed by the Engineer.

561.04 Hydrostatic Tests. Add the following: The Engineer shall be given 24 hours notice prior to the beginning of testing. The testing procedure shall be as outlined in Section 41-2.13 with the following modifications. The test pressure shall be 150 psig with a minimum duration of 4 hours. All fire hydrant auxiliary valves shall be open.

561.05 Disinfection of Water Main. Add the following: The Engineer shall be given 24 hours notice prior to the beginning of disinfection. The testing procedure shall be as outlined in Section 41-2.14 with the following modifications:

41-2.14B Requirement Of Chlorine Delete the entire section and replace with the following: Before being placed into service, all new mains and repaired portions of, or extensions to existing mains shall be chlorinated so that the initial chlorine residual is between 50 and 400 ppm at all points within the main. After 24 hours has passed, the chlorine residual shall be no less than 25 ppm or 50% of the initial residual, whichever is greater.

41-2.14C Form Of Applied Chlorine Delete subsections (2) and (3).

561.06 Method of Measurement. Delete Section 41-3.

561.07 Basis of Payment. Delete Section 41-4. This work will be paid for at the contract unit price per lineal foot for DUCTILE IRON WATER MAIN, of the diameter specified or ADJUSTING WATER MAIN, of the size specified, which price shall include all pipe; fittings; joint materials and joint restraints; thrust blocks; polyethylene encasement; testing and disinfection, (including fittings, meters, pumps, gauges, laboratory fees); labor; equipment; excavation; and removal of spoil required to complete the work as specified herein. Trench backfill and fittings will be paid for as defined and specified elsewhere in these special provisions.

SECTION 561. WATER MAIN – WATER VALVES REV. 03/02

This work shall be performed in accordance with the applicable portions of Section 561 of the Standard Specifications and Section 42 of the Water and Sewer Specifications with the following alterations.

42-2.01 Manufacture And Marking. Add the following: Valves shall be Mueller A-2360 resilient wedge gate valve with stainless steel trim, or Waterous 500 resilient wedge gate valve with stainless steel trim bolts or approved equal.

42-2.02 Type And Mounting. Add the following: All accessory bolts, studs and nuts shall be "cor-ten".

42-2.03 End Connections. Delete subsections (B), (C), (D) and (E).

42-2.09 Painting At Factory. Delete the entire section and replace with the following: Valve bodies, bonnets and gates shall be epoxy impregnated in conformance with AWWA C550.

561.07 Basis of Payment. Add the following: Valves will be paid for at the contract unit price each for WATER VALVES, of the size specified, which price shall include all labor, materials and equipment required to complete the work as specified herein.

SECTION 561. WATER MAIN – TAPPING VALVES AND SLEEVES REV. 01/02

This work shall be performed in accordance with the applicable portions of Section 561 of the Standard Specifications and Section 46 of the Water and Sewer Specifications with the following alterations.

46-3 Materials. Tapping sleeves shall be manufactured by McWane, Waterous or Mueller.

46-4 Valves. Valves shall conform to Section 42-2.07 and these special provisions.

46-7 Excavation And Backfill. Delete the entire section and replace with the following: Tapping valves and sleeves shall be placed in valve vaults as specified elsewhere in these special provisions.

46-8 Payment. Delete the entire section.

561.07 Basis of Payment. Add the following: Pressure connections will be paid for at the contract unit price each for TAPPING VALVES AND SLEEVES, of the size specified, which price shall include all labor, materials and equipment required to complete the work as specified herein.

SECTION 562. WATER SERVICE LINE – (CORPORATION STOPS) REV. 03/02

This work shall be performed in accordance with Section 562 of the Standard Specifications and with applicable portions of Section 41 of the Water and Sewer Specifications with the following alterations.

562.02 Materials. Water service line shall be Type K copper manufactured in accordance with ASTM B88 and B251 or approved equal. Corporation stops shall be Mueller H-15008, Mueller H-15013, or approved equal.

562.03 General. Add the following: Service line shall be placed through the curb stop a minimum distance of 1 ft. Existing service lines may be a different size or material (e.g. lead or galvanized steel). The Contractor shall provide acceptable couplings or fittings between the new service line and the existing line. No couplings shall be permitted under any paved surface.

562.04 Method of Measurement. Delete Section 41-3.

562.05 Basis of Payment. Delete Section 41-4. Add the following: Add the word "couplings," after the word "fittings,". Corporation stops will be paid for at the contract unit price each for CORPORATION STOPS, of the size specified, which price shall include all labor, equipment, excavation, materials, backfilling, compacting, and removal of spoil required to complete the work as specified herein.

Water service boxes will be paid for separately.

SECTION 563. ADJUSTING SANITARY SEWERS AND WATER SERVICE LINES REV. 01/03

This work shall be performed in accordance with Section 563 of the Standard Specifications and with applicable portions of Sections 34 and 41 of the Water and Sewer Specifications with the following alterations.

563.02 Materials. Sanitary sewer shall be polyvinyl chloride (PVC) pipe conforming to ASTM D2241 with gasket joints conforming to ASTM 3212. The Standard Dimension Ratio (SDR) shall be 26. Connections to existing sewer lines shall be made using Fernco couplings (RC Series Repair Coupling with stainless steel sheer ring). Water service line shall be Type K copper manufactured in accordance with ASTM B88 and B251 or approved equal.

562.04 Method of Measurement. Delete Sections 34-4 and 41-3.

562.05 Basis of Payment. Delete Sections 34-5 and 41-4. Add the word "couplings," after the word "fittings,". Add the following: Corporation stops and water service boxes will be paid for separately.

SECTION 564. MOVING FIRE HYDRANTS (NEW FIRE HYDRANTS) REV. 10/03

This work shall be performed in accordance with Section 564 of the Standard Specifications and with applicable portions of Section 45 of the Water and Sewer Specifications with the following alterations.

564.02 General. Add the following:

Hydrant Extensions. When existing fire hydrants are to be raised, the work shall be accomplished through the use of extension kits manufactured by Waterous. When new water main cannot be placed at plan elevation due to conflicts with other utilities, hydrant extensions may be authorized by the Engineer. If, for any other reason, the Contractor places new water main lower than plan elevation, without the Engineer's approval, fire hydrant extensions shall be installed at the Contractor's expense.

Removal. This work shall consist of the removal of existing fire hydrants and auxiliary valves, thrust blocks, lead-in mains, and fittings. The lead-in main shall be removed from the fitting on the existing main (elbow, tee or cross) which shall be capped using a mechanical plug.

Abandonment (Removal, Special). This work shall consist of removing hydrants to a minimum depth of 3 ft from proposed finished grade. The remaining riser shall be filled with concrete and fitted with an end cap to the satisfaction of the Engineer.

45-2.01 Materials for Hydrants and Appurtenances. Add the following: New fire hydrants shall be Waterous WB-67. The auxiliary valve shall be attached by the manufacturer at the factory. All trim bolts shall be stainless steel. Drain field material shall conform to CA-7 gradation.

45-2.02 Hydrant Details. Add the following to paragraph 2: When new water main cannot be placed at plan elevation due to conflicts with other utilities, hydrant extensions may be authorized by the Engineer. If, for any other reason, the Contractor places new water main lower than plan elevation, without the Engineer's approval, fire hydrant extensions shall be installed at the Contractor's expense.

45-2.04 Painting. Replace paragraph 2 with the following: External above-grade surfaces of fire hydrants shall be coated by the manufacturer with one coat of alkyd based, lead and chrome-free buff primer and two coats of alkyd based, chain-stopped gloss enamel conforming to Waterous M4182, Federal Safety Yellow Hydrant Enamel. Hydrants having been coated with any other coating or color shall not be accepted.

564.03 Basis of Payment. Delete sentence 2. Add the following: New fire hydrants will be paid for at the contract unit price each for FIRE HYDRANT WITH AUXILIARY VALVE AND VALVE BOX, which price shall include all excavation; furnishing all appurtenances, including thrust blocks and extensions authorized by the Engineer; backfilling, including coarse aggregate; and disposal of excavated materials. Connections to new water mains

shall be included in the price of the water main. Connections to existing water mains will be paid for as defined and specified elsewhere in these special provisions.

When payment is authorized by the Engineer, the raising of fire hydrants will be paid for at the contract unit price per meter (foot) for FIRE HYDRANT EXTENSION, which price shall include all labor, material, backfill, and equipment necessary to complete the work.

The removal of fire hydrants will be paid for at the contract unit price each for FIRE HYDRANTS TO BE REMOVED, which price shall include all labor, material, disposal and equipment necessary to complete the work. Trench backfill shall be paid for separately.

The abandonment of fire hydrants will be paid for at the contract unit price each for FIRE HYDRANTS TO BE REMOVED, SPECIAL which price shall include all labor, material, disposal and equipment necessary to complete the work. Trench backfill shall be paid for separately.

SECTION 602. CATCH BASIN, MANHOLE, INLET, DRAINAGE STRUCTURES AND VALVE VAULT CONSTRUCTION, ADJUSTMENT AND RECONSTRUCTION REV. 03/02

This work shall be performed in accordance with Section 602 of the Standard Specifications with the following alterations.

602.02 Materials. Add the following: (k) Resilient Pipe Connectors shall conform to ASTM C-923.

602.05 Delete the entire section.

602.06 Delete the entire section.

602.07 Precast Reinforced Concrete Sections. Delete the second sentence and replace with "The units shall be sealed using mastic joint sealer." Add the following: All precast manhole bottoms shall have the inverts (benches) formed in them either during fabrication or after installation, utilizing Class SI concrete. Add the following: All new structures shall be mortared on the inside and outside at all structure joints between barrel, cone, and flat top sections.

602.08 Steps. Delete the first sentence and replace with "Steps, when required, shall be plastic coated reinforcing bar of the dimensions indicated on the Village standard detail."

602.10 Furnishing and Placing Casting.
Add the following to subsection (a): All new frames and lids shall be Neenah R-1015 or East Jordan 1050Z1 self sealing lids having the word "SANITARY", "STORM" or "WATER" cast into them as appropriate.
Add subsection (d) as follows: When structures do not fall within pavement or are not placed per (b) or (c) above, an external chimney seal which fully encompasses the rings and castings shall be installed.
When directed by the Engineer the Contractor shall install a concrete collar behind any curb box that is found to be susceptible to inflow and infiltration.

602.12 Inlet and Outlet Pipes. Add the following: All manholes designated for sanitary sewers and valve vaults shall have resilient pipe connectors (rubber boots) for each pipe entering or leaving the manhole. All new structures without boots shall have inlet and outlet pipes sealed with mortar to eliminate infiltration.

SECTION 605. REMOVING OR FILLING EXISTING MANHOLES, CATCH BASINS AND INLETS REV. 01/02

This work shall be performed in accordance with Section 605 of the Standard Specifications with the following alterations.

605.04 Filling Existing Manholes, Catch Basins, and Inlets. Add the words "Valve Vaults" after the word "Basins" in the title. Add the following: The operating nuts of valves, which are to remain in place, shall be broken off from the valve body.

605.06 Basis of Payment. In paragraphs 1 and 3, add the words "valve vaults," after the word "basins" and the words "FILLING VALVE VAULTS" after the word BASINS.

SECTION 606. COMBINATION CONCRETE CURB AND GUTTER, TYPE M-6.24 (VARIABLE WIDTH GUTTER FLAG)

Description: This work shall consist of the construction of curb and gutter in accordance with Section 606 of the Standard Specifications and IDOT Standard 606001. The width of the gutter flag shall vary to match the station and offsets shown on the Island Details included in the plan set.

SECTION 606. CONCRETE GUTTER, CURB, MEDIAN AND PAVED DITCH REV. 01/02

This work shall be performed in accordance with Section 606 of the Standard Specifications with the following alterations.

606.08 Concrete Medians. Add the following paragraph:
When indicated on the plans, the concrete median surface shall be stamped and colored as follows. The concrete shall be colored throughout by adding a dying agent approved by the Engineer directly into the mixer. The concrete surface shall be covered with a thin (3 mil) plastic film then imprinted with a basket-weave type pattern using a roller provided by the Engineer. The Contractor shall submit, in writing, their construction methodology for completing the coloring and imprinting of the concrete at the pre-construction meeting. In addition, the supplier of the coloring shall be submitted for approval at that time. The cost of aggregate fill shall be considered incidental to the cost of the median.

606.14 Basis of Payment. Add the following to paragraph 2: This work will be measured and paid for at the contract unit price per square meter (square foot) for CONCRETE MEDIAN SURFACE (SPECIAL), of the thickness specified, which price shall include all labor, materials, including aggregate fill, and equipment necessary to complete the work.

SECTION 670. ENGINEERS FIELD OFFICE AND LABORATORY REV. 02/02

This work shall be performed in accordance with Section 670 of the Standard Specifications with the following alterations.

670.01 Description. Add the following: The contractor shall complete a permit application, which will be supplied at the pre-construction meeting. There will be no charge for the permit. Information that must be supplied with the permit includes:

- ✓ 3 copies of the site plan (showing the location of the field office and the electrical power drop)
- ✓ Amperage of the field office
- ✓ Copy of the electrician's license (obtained from a recognized testing facility)
- ✓ Electrician's certificate of insurance (naming the Village of Lombard as a certificate holder and additional insured)
- ✓ Address of the field office
- ✓ Name of the project for which the field office is being used.

670.02 Engineer's Field Office Type A. In paragraph 1, replace "35 sq m (380 sq ft)" with "23 sq m (244 sq ft)". Delete paragraph 5 in its entirety. In subparagraph 6 (a), replace "four desks" with "two desks" and replace "five non-folding chairs" with "three non-folding chairs". In subparagraph 6 (i), delete the second sentence.

670.07 Basis of Payment. In paragraph 1, delete "...except the Department will pay that portion of each monthly long distance telephone bill in excess of $50."

SECTION 701. WORK ZONE TRAFFIC CONTROL

This work shall be performed in accordance with Sections 701 and 702 of the Standard Specifications, the Highway Standards and the construction plans.

Special attention is called to Articles 107.09 and 107.14 and the following Highway Standards:

701601-03 Urban Lane Closure, Multilane, 1W or 2W, with Non Traversable Median
701701-03 Urban Lane Closure, Multilane Intersection
702001-03 Traffic Control Devices

701.07 Method of Measurement. Delete entire section and replace with: Traffic Control and Protection will be measured on a lump sum basis.

701.08 Basis of Payment. Delete sections (a), (b), (c), (d) and (e) and add the following: No compensation for any delays that may be caused to the Contractor in complying with this special provision shall be made. This work will be paid for at the contract lump sum price for TRAFFIC CONTROL AND PROTECTION, less amounts deducted for non-compliance with this special provision.

SECTION 720. SIGN PANELS AND APPURTENANCES REV. 01/02

This work shall be performed in accordance with Section 720 of the Standard Specifications with the following alterations.

720.02 Materials. Delete Table 1091-2 and replace with the following:

Type A

Observation Angle	0.2			0.5		
Entrance Angle	-4	+30	+45	-4	+30	+45
Color						
Silver / White	250.0	175.0	95.0	95.0	70.0	55.0
Yellow	170.0	135.0	50.0	62.0	60.0	40.0
Orange	100.0	60.0	N/A	30.0	25.0	N/A
Red	45.0	30.0	12.0	15.0	12.0	10.0
Green	45.0	30.0	12.0	15.0	12.0	10.0
Blue	20.0	11.0	6.0	7.5	5.0	4.0
Brown	12.0	8.5	2.8	5.0	3.5	2.5

Type AZ

Observation Angle	0.2			0.5		
Entrance Angle	-4	+30	+45 *	-4	+30	+45 *
Color						
White	430.0	250.0	150.0	250.0	170.0	60.0
Yellow	350.0	200.0	120.0	200.0	140.0	45.0
Orange	200.0	120.0	N/A	80.0	50.0	N/A
Red	115.0	70.0	45.0	65.0	45.0	18.0
Green	50.0	30.0	16.0	30.0	22.0	5.0
Blue	25.0	15.0	7.5	15.0	10.0	2.2
Brown	N/A	N/A	N/A	N/A	N/A	N/A

* Denotes 90° rotation angle

Type AZ sheeting shall meet or exceed the minimum requirements of Type AA sheeting in all other aspects. Sheeting shall be "Scotchlite" as manufactured by 3M Corporation.

720.03 General. Add the following: All signs shall be fabricated with faces of Type A sheeting except STOP (R1-1), YIELD (R1-2), Advance Crossing Signs (W11 Series), Crossing Signs (W11A Series), SCHOOL ADVANCE (S1-1), SCHOOL CROSSINC SIGN (S2-1), and School Speed Limit Signs (S4 Series) which shall be fabricated with faces of Type AZ sheeting. In the fifth paragraph replace "initials IDOT." with "words Village of Lombard."

SECTION 780. PAVEMENT STRIPING

This work shall be performed in accordance with Section 780 of the Standard Specifications with the following alterations.

780.07 Preformed Plastic. Delete this entire section and replace with the following: All pavement markings shall be Stamark High Performance Tape Series 380I (letters, symbols and long lines) and 420 (intersection and crosswalks) as manufactured by the 3M Company. The publication "Pavement Surface Preparation and Application Techniques for 3M Stamark Tapes" must be adhered to. The Contractor may request a copy of the publication directly from 3M Company by using the fax-on-demand service. Call 1-800-887-3238 and request document number 4470. Only contractors and their technicians and installers that are certified by the 3M Company will be permitted to install preformed plastic pavement marking tape. The list of currently certified installers is available by contacting Kari Jerich Brunn at 800-949-2196.

The pavement surfaces shall be cleaned, sand blasted and primed as recommended by the 3M Company. A primer sealer shall be applied as recommended by the 3M Company pavement surfaces where new preformed plastic pavement marking material is to be applied.

780.12 Basis of Payment. Add the following sentence: "All pavement cleaning, sand blasted and primer will not be measured but shall be considered incidental to the cost of the various types of PREFORMED PLASTIC PAVEMENT MARKING.

AGGREGATE FOR TEMPORARY ACCESS REV. 01/02

Description. This work shall consist of the construction and maintenance of an aggregate surface course for maintaining access to intersecting streets and driveways as specified in Article 107.09 of the Standard Specifications. During construction, the Contractor shall provide access at all times for emergency vehicles, school buses, and all abutting properties.

Construction Requirements. Aggregate for temporary access roads and driveway aprons shall be removed and/or reused at the direction of the Engineer. Aggregate surface shall be constructed in accordance with the applicable portions of Section 402 of the Standard Specifications excepting that the coarse aggregate shall meet CA-6 gradation, and that the equipment required for the work will be as directed by the Engineer. Maintenance shall consist of placing and compacting additional aggregate of the same type and gradation as the surface aggregate.

Basis of Payment. This work will be paid for at the contract unit price per ton for AGGREGATE FOR TEMPORARY ACCESS, which price shall include furnishing, transporting, placing, maintaining, and removing, reusing or disposing of the aggregate as herein specified and as directed by the Engineer. Payment for aggregate will be made for its initial use only, regardless of the number of times it may be moved.

DUST CONTROL WATERING REV. 02/02

This work shall be performed in accordance with Section 107 of the Standard Specifications with the following alterations.

107.36 Dust Control. Delete section (d) of paragraph 4 and add the following: Dust shall be controlled by the uniform application of sprinkled water and shall be applied only when directed and in a manner approved by the Engineer. All equipment used for this work shall meet with the Engineer's approval and shall be equipped with adequate measuring devices for determining the exact amount of water discharged. All water used shall be properly documented by ticket or other approved means.

Delete paragraph 6 in its entirety. The intent of dust control watering is to supplement the Village's dust control program. The Village applies a dust control suppressant as necessary. The dust suppressant is applied regularly until pavement is restored. The cooperation of the contractor regarding this activity is addressed in Section 105.08 of the Standard Specifications.

Method of Measurement. This work will be measured in units of gallons of water applied. One unit is equivalent to 1,000 gallons of water applied. The Contractor's attention is called to Article 107.18 of the Special Provisions.

Basis of Payment. This work will be paid for at the contract unit price per unit for DUST CONTROL WATERING, which price shall include all labor, water and equipment for controlling dust as herein specified.

PRECONSTRUCTION VIDEO TAPING REV. 02/02

Description. The Contractor shall prepare pre-construction video documentation of all features in the area affected by construction. All video camera, recorders, tapes, accessories, and appurtenances shall be high quality VHS format equipment. Pre-construction video documentation shall consist of a series of high resolution color audio-video tapes showing all areas affected by construction.

Construction Requirements. All pertinent exterior features within the construction's zone of influence shall be shown in sufficient detail to document its pre-construction condition. Features to be shown shall include but not be limited to pavements, curbs, driveways, sidewalks, retaining walls, buildings, landscaping, trees, shrubbery, fences, light posts, etc. View orientation shall be maintained by audio commentary on the audio track of each video tape to help explain what is being viewed.

Basis of Payment. The pre-construction video taping shall be completed and copies of the tapes submitted to the Village for approval before commencing mobilization and/or construction activities. This work shall be paid for at the contract lump sum price for PRECONSTRUCTION VIDEO TAPING. No progress payments will be processed until the preconstruction video tape has been received and approved by the Village.

VALVE VAULTS, TYPE A, 6' DIAMETER, TYPE 1 FRAME, CLOSED LID

Description: This work shall consist of the construction of valve vaults in accordance with Section 602 of the Standard Specifications and IDOT Standard 602501. The opening in the flat top slab shall be centered.

Measurement and Basis of Payment. This work will be paid for at the contract unit price per each for VALVE VAULTS, TYPE A, 6' DIAMETER, TYPE 1 FRAME, CLOSED LID.

WATER MAIN FITTINGS REV. 03/02

Description. This work shall consist of furnishing and installing all tees, wyes, crosses, bends, plugs, cut-in sleeves, retainers and reducers necessary to complete the water main installation as shown on the plans. It shall be done in accordance with the applicable portions of Section 46 of the Water and Sewer Specifications, the Village's Standard Details, and the following.

Materials. Fittings shall be ductile iron meeting requirements of ANSI/AWWA C153/A21.10 and ANSI/AWWA C111/A21.11.

Manufacturers. Fittings shall be manufactured by United States Pipe and Foundry Co.

Construction Requirements. All fittings shall be wrapped in a polyethylene film as specified in the special provision for Ductile Iron Water Main. All fittings shall be installed using "cor-ten" bolts. Testing and disinfecting of fittings shall be as specified elsewhere herein. Any fittings not shown on the plans, but which in the opinion of the Engineer, are necessary, will also be measured for payment. The Contractor will be required to maintain a list of all items used and provide an invoiced weight for payment purposes.

Method of Measurement. Water main fittings will be measured by weight in pounds of actual fittings installed including glands, gaskets and bolts. In lieu of weighing the fittings at the job site, the fittings may be delivered with a letter from the manufacturer certifying the weight of each type and size of fitting, subject to the review of the ENGINEER. In any case, the weight per fitting allowable for payment shall not exceed the following:

Bends	Tees & Crosses	Miscellaneous
45° bend, 6" – 75 lbs.	Tee, 6"x 6" – 125 lbs.	Cut-In-Sleeve, 6" – 65 lbs.
45° bend, 8" – 110 lbs.	Tee, 8"x 6" – 175 lbs.	Cut-In-Sleeve, 8" – 85 lbs.
45° bend, 20" – 505 lbs.	Tee, 8"x 8" – 185 lbs.	Cut-In Sleeve, 12" – 195 lbs.
22.5° bend, 8" – 110 lbs.	Tee, 12" x 6" – 325 lbs.	Cut-In Sleeve, 16" – 260 lbs.
22.5° bend, 6" – 75 lbs.	Tee, 12" x 8" – 340 lbs.	Reducer, 8" x 6" – 95 lbs.
11.25° bend, 8" – 110 lbs.	Tee, 16" x 16" – 590 lbs.	Reducer, 12" x 8" – 165 lbs.
11.25° bend, 6" – 75 lbs.	Tee, 20" x 6" – 585 lbs.	Reducer, 20" x 16" – 450 lbs.
	Tee, 20" x 12" – 630 lbs.	Cap, 6" – 30 lbs.
	Tee, 20" x 20" – 885 lbs.	Cap, 8" – 45 lbs.
	Cross, 8" x 8" – 108 lbs.	Cap, 16" – 165 lbs.
	Cross, 12" x 12" – 495 lbs.	Retainer, 6" – 20 lbs.
	Cross, 20" x 8" – 635 lbs.	Retainer, 8" – 25 lbs.
		Retainer, 12" – 40 lbs.
		Retainer, 16" – 65 lbs.
		Retainer, 20" – 95 lbs.

Basis of Payment. This work will be paid for at the contract unit price per pound for WATER MAIN FITTINGS, which price shall be payment in full for all labor, equipment, and material, including polyethylene wrapping, testing and disinfecting, to complete the work as specified herein.

CONNECTION TO EXISTING WATER MAINS (NON PRESSURE) REV. 03/02

Description. This work shall consist of the connection of new water main and fire hydrant leads to existing water main. It shall be performed in accordance with applicable portions of Section 41 of the Water and Sewer Specifications with the following clarifications.

Materials. Water main and fittings shall conform to the special provisions for Ductile Iron Water Main and Water Main Fittings. The work includes a material allowance of 15 linear feet of ductile iron pipe (of the necessary diameter) and 500 pounds of fittings. Trench backfill shall meet the requirements for CA-6 listed in Article 1004.01.

Construction Requirements. New water main shall be connected to existing water main after the new main has passed hydrostatic testing and disinfection. Connections shall be accomplished by the use of mechanical joint fittings and lengths of pipe to make the most direct vertical and horizontal adjustments necessary to complete the connection. This may include cut-ins to the existing main or connections to existing valves or fittings. This work will require water to be shut off, which shall be coordinated with the Village's maintenance personnel. The new main shall be disinfected in accordance with Article 561.03(h) of the Water Main special provision.

Basis of Payment. This work will be measured and paid for at the contract unit price per each for CONNECTION TO EXISTING WATER MAINS (NON PRESSURE) which price shall include all labor, equipment, ductile iron pipe water main (up to 15 linear feet), water main fittings (up to 500 pounds), polyethylene wrapping, disinfection, testing, backfill and thrust blocking required to make the connection. If the quantity allowance for ductile iron water main and/or water main fittings are exceeded, quantities in excess of the allowance will be paid for under the items for DUCTILE IRON WATER MAIN and WATER MAIN FITTINGS.

LINE STOPS

Description. This work shall consist of the placement of a self-contained unit of the size indicated on the plans for the purpose of installation of a valve and/or other connection with the existing water distribution system without interruption of service. This work shall be performed at the locations shown on the plans and as directed by the Engineer.

Materials and Construction Requirements. The line stop unit shall be a self-contained hydraulic (hand pump operated) ram. The line stopping device shall be of such a design, that when hydraulic pressure is applied, the rubber will expand and conform to the inside diameter of the pipe and tuberculation in side the main (if any) will be moved outside of the sealing area. The line stop shall be of the "Short Stop" variety which will require removing only the top of the pipe during operation. All fittings shall employ an inside diameter thread, screw-type connection. After insertion of the plug, the screw-on cap shall be used and bolted down. The system shall be capable of containing a water pressure of 150 p.s.i. The line stopping system shall be Hydra-Stop or approved equal. Shop drawings for line stop sleeves shall be submitted for approval by the Engineer prior to delivery to the job site.

Basis of Payment. This work will be paid for a the contract unit price each for LINE STOPS, of the diameter specified, which price shall be payment in full for all excavation, saw cutting, legal disposal off-site of all excess material, trench backfill, labor, materials and equipment necessary to perform the work as herein specified.

STORM SEWERS, SPECIAL REV. 1/01

Description. This work shall consist of the installation of watermain quality pipe in areas where the storm sewer line crosses above the watermain. All work shall be performed in accordance with Section 550 of the STANDARD SPECIFICATIONS and Section 40 of the Water and Sewer Specifications.

Materials. All pipe materials shall conform to Section 40-2 of the Water and Sewer Specifications. Except that only Ductile Iron Pipe will be allowed beneath pavements. The materials shall be approved by the Engineer prior to their installation.

Basis of Payment. This work shall be measured and paid for at the contract unit price per foot of the size specified for STORM SEWERS, SPECIAL which price shall include all labor, equipment, and materials necessary to perform said work.

STEEL CASING PIPE, 48"

Description. This work shall consist of installing a steel casing pipe in a trench at the locations as shown on the plans or as directed by the ENGINEER.

Materials. Steel casing pipe shall have a minimum yield strength not less than 35,000 psi. Steel casing pipe size and piping wall thickness shall be as shown on the Drawings. All casing pipe shall be manufactured of new billet steel, cylindrical, with smooth bituminous coated walls inside and outside. Steel casing pipe shall conform to ASTM A453 Grade B, ASTM A139 Grade B, or pipe fabricated in accordance with AWWA C200 using ASTM A36 steel. Casing pipe minimum wall thickness shall be as required by the CONTRACTOR's method of construction, but in no case shall it be less than as shown on the Drawings.

Construction Requirements. Steel casing pipe shall be installed in a trench and shall include all things necessary, but not limited to, excavation sheeting/bracing, dewatering, pumping, welding, backfilling and compacting all as required for the steel casing pipe installation. During installation of the steel casing pipe and as additional lengths of steel casing pipe are placed end to end, the ends of the steel casing pipe shall be welded together so that the completed casing forms a continuous length. When the watermain (carrier pipe) is placed in the casing pipe, casing spacer shoes shall be placed on the watermain (carrier pipe) before insertion into the steel casing pipe. A minimum of 3 casing spacers shall be provided per standard 18 ft. to 20 ft. length of watermain piping or approximately every 6 feet. Casing spacers shall be Cascade Model CSS or approved equal. After the installation of the watermain within the steel casing pipe is complete, the annular space between the watermain and the casing pipe at both ends shall be sealed with Cascade Model CCES end seals or approved equal.

Measurement and Payment. This work will be measured and paid for at the contract unit price per foot for STEEL CASING PIPE, 48" or the size specified which price shall include all labor, equipment, and material necessary to complete the specified work.

RELOCATE EXISTING LIGHTING UNIT

Description. This item shall consist of removing an existing lighting unit and reinstalling the unit on a proposed foundation in locations as designated by the Engineer. All appurtenant material and work required for the relocation shall be included as part of this item.

Materials. Unless otherwise indicated, the existing lighting unit consists of an aluminum or concrete pole shaft, mast arm, luminaires and all pole wiring.

Construction Requirements. The existing lighting unit shall be disconnected and removed from the existing foundation by way of removing the anchor bolt nuts and lifting the lighting unit from the foundation. Unless otherwise indicated, removal of the existing foundations shall be part of this pay item and will not paid for separately.

Any damage sustained to the lighting unit during removal operation shall be repaired, or replaced in kind, to the satisfaction of the Engineer at contractor's own expense.

Unless otherwise indicated, the lighting unit shall be installed immediately on the proposed foundation in accordance with section 835 of the IDOT Standards for Road and Bridge Construction. The electric cables shall be connected to power supply cables so that the reinstalled lighting unit becomes operational the following evening without interruptions. Temporary wiring will be permitted at the discretion of the Engineer.

This item shall include wiring extensions, including conduit and/or duct to and from adjacent poles fed from the existing controller, cable splicing and the furnishing and installing of standard or quick- disconnect type fuse holders as applicable, and fuses as specified under Basic Materials and Methods. If a conduit or duct extension is required, the conduit and/or duct maybe spliced and new span of cable shall be installed. The Engineer shall inspect all conduit and/or duct splices before backfilling.

Unless otherwise indicated, the existing pole wire shall be preserved and reconnected to the proposed underground wiring.

The anchor bolt covers of the lighting unit shall be removed and reinstalled. If during removal, the screws holding the cover break, a hole in the pole base shall be drilled and threaded to accept a new screw. The new screw shall be nylon screw with a metal core.

The handhole cover of the lighting unit shall be removed and reinstalled. If during removal, the screws holding the cover break, a new hole shall be drilled and threaded to accept a new screw of the nylon-metal core type.

There shall be no need to remove the mast arm during removal and resetting operations of the lighting unit.

There shall be no need to remove the luminaires during the removal and resetting operations of the lighting unit, unless directed otherwise by the Engineer.

The mast arm and/or luminaries may be removed and reinstalled, at the option of the Contractor, with the approval of the Engineer. No additional compensation will be paid for these operations.

Each pole, which is to be relocated under this item, shall be checked during the Pre-construction Inspection for complete circuit identification.

Any damage to the identification occurring prior to final acceptance shall be repaired or replaced under this item, in conformance with the specifications under Basic Materials and Methods elsewhere herein, at no additional cost to the Village.

The existing circuit identification and the identifications shown on the Plans shall be compared and where the existing identification must be changed to conform with the Plans, the removal and replacement of identification shall be included incidental to this item.

Basis of Payment. This item will be paid for the contract unit price each for RELOCATE EXISTING LIGHTING UNIT, which shall be payment in full for performing the work, described herein.

REBUILD EXISTING HANDHOLE TO DOUBLE HANDHOLE

Description and Construction Requirements. This work shall consist of furnishing the materials and rebuilding an existing handhole to a double handhole at the locations shown in the plans. The work shall be done in accordance with Section 814 of the Standard Specifications for Road and Bridge Construction.

Basis of Payment. This work shall be paid for at the contract unit price each for REBUILD EXISTING HANDHOLE TO DOUBLE HANDHOLE, which price shall be payment in full for furnishing all labor, materials and equipment to complete the work specified herein.

MODULAR RETAINING WALL SYSTEM

Description. This work shall consist of furnishing and installing precast retaining walls at the locations shown on the plans or as directed by the Engineer.

* **Materials.** Precast retaining wall blocks shall be manufactured by Keystone Retaining Wall Systems, Inc. of Roselle, Illinois or approved equal, color to be gray. The Contractor shall submit a specification sheet (catalog cut) to the Engineer for approval prior to ordering any material.

Construction Requirements. Precast retaining walls shall be installed in strict accordance with the manufacturer's instructions. Construction drawings and design calculations for the retaining wall system shall be prepared by a registered professional engineer and shall bear their signature and seal. The Contractor shall submit these to the Village for approval prior to beginning work on this item.

Basis of Payment. This work will be paid for at the contract unit price per square foot of face for MODULAR RETAINING WALL SYSTEM which price shall include all labor, equipment, excavation, materials – including geogrid and underdrains as required, backfilling and compacting, removal of spoil, and other incidentals as specified by the manufacturer required to complete the work as specified herein.

*Revised 2-17-04

FURNISHING AND PLACING TOPSOIL (VARIABLE THICKNESS)

Description. This work shall conform to Section 211 of the "Standard Specifications".

Materials and Construction Requirements. The topsoil shall be placed in the median planting area as shown on the details in the plans. The Contractor shall place the topsoil in such a manner as to prevent it from spilling on the pavement.

Measurement and Basis of Payment. FURNISHING AND PLACING TOPSOIL (VARIABLE THICKNESS) will be paid for at the contract unit price per cubic yard.

PLANTING & MAINTENANCE

Description. The work shall consist of the transport, installation and maintenance of all trees, shrubs, and perennials as specified herein and at the direction of the Engineer. The work shall also include mulching, pruning, watering, fertilizing, inoculating, weeding and replacing of plants when required. A certified arborist or forester shall specify and oversee pruning and other techniques deemed necessary to preserve the trees.

Materials and Construction Requirement. Plant material shall comply with Sections 253 and 1081 of the Standard Specifications.

Plant materials shall be subject to final approval by the Engineer at the site prior to installation.

Plants shall be planted only when the air temperature exceeds 35° F. Plants shall be handled/transported and stored at all times in accordance with the best horticultural practices. Trees or shrubs handled otherwise will be subject to rejection by the Engineer

All plant material shall be dormant upon delivery to the site, unless otherwise approved by the Engineer. Plant material will be inspected by the Village or their representative upon delivery to the Work Site and may be rejected if any or all of the following conditions are present:

- Plants do not meet the material specifications under Section 1081 of the Standard Specifications.
- Undersized, damaged, or loosened root balls.
- Broken branches.
- Evidence of desiccation, wind, or frost injury.
- Bark abrasions.

Plants shall be shipped with legible labels stating correct name and size, securely attached to individual plants.

The Contractor shall maintain responsibility for caring for the plants, if delays occur between delivery of the plants and planting, whether or not the delay is within the Contractor's control.

No tree shall be placed within 5 feet of another tree. Trees shall be planted in the areas as shown in the plans. Shrub species are to be planted in groupings as shown in the plans.

Trees and shrubs shall be planted in accordance with the National Arborist's Associations recommended practices. All wire or twine shall be cut away from balled and burlapped plants. Watering shall accompany the backfill operation to eliminate air pockets. Excavation of plant holes shall be in accordance with Article 253.08 of the Standard Specifications as modified herein with the enclosed planting detail.

Shredded Bark Mulch and Weed Barrier Fabric. Mulch shall be applied at a 3" depth within the median planter around the trees and shrubs. The mulch material for planting shall consist of shredded tree bark, or other approved organic mulch. The mulch must be approved by the Engineer prior to placement. The Weed Barrier Fabric should conform to Section 1081.12 of the Standard Specifications. Fabric edges will overlap 3" and be anchored in place using appropriate landscape fabric anchors.

Tree Fertilizing and Inoculating. A controlled release fertilizer such as NUTRI PRO or equivalent as manufactured by Tree Pro of West Lafayette, Indiana, shall be planted at the same time as planting the tree in the tree hole. One 5 year packet per every caliper inch should be installed.

Mycor Tree Root Saver Inoculate or equivalent shall be used to inoculate at a rate of 18 oz. per caliper inch as manufactured by Tree Pro of West Lafayette, Indiana. Apply by sprinkling throughout the hole before installing the tree.

Pruning. Pruning shall be done after planting. Remove only dead and/or damaged branches. Trees and shrubs shall be pruned by a professional arborist in conformance with National Arborist's Association Pruning Standards for Shade Trees Class 1 – Tree Pruning. Pruning shall comply with Article 253.09 of the Standard Specifications.

Watering. Trees and shrubs shall be watered slowly and evenly to allow saturation of the entire root zone to a 6 inch minimum depth. Rate of application shall limit runoff and maximize saturation. Watering shall be done without injury to the tree, shrub, or the Work Site.

Inspection and Acceptance. After all plants have been installed, the Contractor shall notify the Village of Lombard and request an inspection. As soon as practicable thereafter, the Village will make an inspection, at which time all trees and shrubs planted in accordance with Article 253 of the Standard Specifications and in a live, healthy condition will be accepted for payment. Plants not in a live and healthy condition will not be accepted for payment. Plants not in a live and healthy condition shall be replaced at the Contractor's expense.

Guarantee Period. Contractor shall warrant and guarantee all Work under this Section for a period of twelve months following acceptance. Inspections will be conducted by the Village the fall following installation, and prior to twelve (12) months following installation. The Contractor shall be present during the inspections.

Satisfactory performance shall consist of 100% of the trees and shrubs alive one calendar year after initial planting. Any tree or shrub which has not successfully rooted by the time of the final inspection shall be removed and replaced by the Contractor at no expense to the Village. The time of the final inspection will be within one month of one calendar year from the date of planting.

If the Contractor fails to comply with the requirements for satisfactory performance, the Village has the right to make other arrangements as it may deem necessary to correct the

deficiency. The cost resulting from such action by the Village shall be deducted from the performance security established by the Village.

All trees that are dead or, at the determination of the Village or their representative, are in an unsightly or unhealthy condition at the time of inspection, shall be replaced by the Contractor at no additional expense to the Village. All trees shall be restored to an upright, plumb position. Plant material furnished for replacement shall be of the same source, size, type and quality as originally approved, and planted in accordance with these specifications unless otherwise approved by the Village. Replacement plants are subject to the approval of the Village. No guarantee is required on approved replacements.

Warranty shall not include damage or loss of trees caused by fire, flood, lightning, or winds over 75 miles per hour.

Measurement and Basis of Payment. This work shall be paid for at the contract lump sum for PLANTING & MAINTENANCE, which shall constiture full compensation for handling, storage, preparation, planting, excavation, backfilling, fertilizing, inoculating, mulching, barrier fabric, pruning, weeding, post planting watering, plant care, and for all labor, tools and incidentals necessary to complete the work as specified.

Trees, shrubs, and perennials will be measured separately for payment per each of the type and size specified.

DRAINAGE BOARD

Description. This work shall consist of furnishing and installing a geocomposite drainage system on the inside of cast-in-place concrete median walls.

Materials. The geocomposite drainage system shall be Sheet Drain as manufactured by Greenstreek (800) 325-9504 or an approved equal.

All Drain Panels shall be manufactured using a High-Impact Polystyrene Core (HIPS) with UV stabilizers to inhibit ultraviolet degradation. Each panel shall be covered on one side with a polypropylene geotextile filter fabric.

Drainage Systems shall meet or exceed AASHTO/AGC/ARTBA guidelines per their joint publication titled Task Force 25 "Guide Specifications for Geotextiles in Separation Applications."

Construction Requirements. The filter fabric faces out toward the backfill (the direction from which the water will come).

Panels should lap a minimum of two rows of dimples on all edges. Both the core and the filter fabric should be shingled in the direction of the water flow.

Attach the drain using a general construction grade adhesive, pressure-sensitive adhesive or a mastic used for membrane applications. The membrane and drain core shall be clean and dry. Care shall be taken to be sure the adhesive is compatible with the dampproofing material or waterproofing material or waterproofing membrane and the drain core. Check with the waterproofing manufacturer and Greenstreak before making a final decision.

Basis of Payment. This work shall be measured and paid for at the contract unit price per square foot for DRAINAGE BOARD.

MEDIAN WALL, CAST-IN-PLACE CONCRETE

Description. This work shall consist of constructing a cast-in-place concrete median wall with an architectural concrete form liner and precast stone cap in accordance with Sections 503 and 508 of the "Standard Specifications" and as specified herein.

Materials. Concrete shall meet the requirements of IDOT Class SI with a minimum cement weight per cubic yard of 605 lbs and a minimum 14 day compressive strength of 3,500 psi. The Contractor shall use one brand of cement and one concrete supplier throughout the project.

Architectural concrete form liner shall be Custom Rock No. 12010 Minnehaha or an equal approved by the Engineer. The architectural concrete form liner will be used in strict accordance with the manufacturer's instructions. Custom Rock Form Liners are available from Custom Rock International Direct Sales, Contact Ronda Gilbert at (775) 852-1166, web page www.custom-rock.com. The Contractor shall supply the Village an unused form liner a minimum size of 1.5' high by 10' long for future repairs. A custom form liner will be required at the angled median wall ends.

Reinforcement bars shall be epoxy coated with fy min = 60,000 psi in accordance with Section 508 of the "Standard Specifications".

Architectural precast stone shall consist of Portland cement and fine aggregate to simulate natural cut limestone. Precast stone shall have a minimum compressive strength of f'c=6,500 psi.

A. Portland Cement shall conform to ASTM-C150 Type I or Type III. All cement shall be from the same source throughout the project.
B. White Portland Cement shall conform to ASTM-C150 Type I or Type III. All cement shall be from the same source throughout the project.
C. Fine Aggregate to be carefully graded, washed natural Gravel or (crushed and graded) stones such as granite, quartz, limestone or other durable stone meeting ASTM-C33 except that gradation may vary to achieve the desired finish and texture.
D. Color – shall be inorganic (natural or synthetic) iron oxide pigments meeting ASTM-C979 excluding the use of a cement grade of carbon black pigment, and shall be guaranteed by the pigment manufacturer to be lime-proof. The amount of pigment shall not exceed 10% by weight of cement used. The color shall match the color of the cast-in-place concrete.
E. Reinforcement:
    1. Standard bars: ASTM A615, Grade 60.
    2. Welded wire fabric: ASTM A185.
    3. All reinforcement located within 1 inch of weather-exposed surface shall be hot-dip galvanized after fabrication, ASTM A123.
F. Finish: Finish shall be smooth-honed free of protruding exposed aggregate.

Construction Requirements. Concrete placement shall be in accordance with Section 503 of the "Standard Specifications". Concrete shall be properly vibrated to achieve proper consolidation, but not over vibrated to cause aggregate segregation. Any honeycombing or unconsolidated concrete shall be removed and replaced at no cost to the Village. All exposed surfaces shall be free of defects and fins and other projects shall be ground smooth. Grind over seam marks until smooth. Upon completion of grinding, Contractor shall apply a 5 to 10 percent concentration of hydrochloric acid wash to clean the exposed surfaces. Thoroughly neutralize and flush acid from finished surfaces with water under pressure. Precast stone caps shall be mortared to the top of the concrete wall and set on stainless steel pins cast into the concrete wall (min. 2 per cap).

Curing.

A. General: Comply with ACI 308 "Standard Practice for Curing Concrete". Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. In hot, dry and windy weather, protect concrete from rapid moisture loss before and during finishing operations with an evaporation-control material. Apply according to manufacture's instructions after screeding and bull floating, but before power floating and troweling.

B. Start initial curing as soon as free water has disappeared from concrete surface after placing and finishing. Weather permitting, keep continuously moist for not less than 7 days.

C. Curing Methods: Cure concrete by curing compound, by moist curing, by moisture-retaining cover curing, or by combining these methods, as specified.

D. Provide moisture curing by the following methods:

1. Keep concrete surface continuously wet by covering with water.

2. Use continuous water-fog spray.

3. Cover concrete surface with specified absorptive cover, thoroughly water cover with water, and keep continuously wet. Place absorptive cover to provide coverage of concrete surfaces and edges, with a 4-inch lap over adjacent absorptive covers.

E. Provide moisture-retaining cover curing as follows:

1. Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width with sides and ends lapped at least 3 inches and sealed by waterproof tape or adhesive. Immediately repair any holes or tears during curing period using cover material and waterproof tape.

F. Apply curing compound on exposed interior slabs and on exterior slabs, walks, and curbs as follows:

1. Apply curing compound to concrete slabs as soon as final finishing operations are complete (within 2 hour and after surface water sheen has disappeared). Apply uniformly in continuous operation by power spray or roller according to manufacturer's directions. Recoat areas subjected to heavy rainfall within 3 hours after initial application. Maintain continuity of coating and repair damage during curing period.

G. Curing Formed Surfaces: Cure formed concrete surfaces, including underside of beams, supported slabs, and other similar surfaces, by moist curing with forms in place for the full curing period or until forms are removed. If forms are removed, continue during by methods specified above, as applicable.

H. Curing Unformed Surfaces: Cure unformed surfaces, including slabs, floor topping and other flat surfaces, by applying the appropriate curing methods.

1. Final cure concrete surfaces to receive finish flooring with a moisture-retaining cover, unless otherwise directed.

Protective Coat. Upon completion of curing, grinding and washing, Contractor shall apply two coats of boiled linseed oil mixture as per Article 503.19 of the "Standard Specifications."

Basis of Payment. Cast-in-place concrete median walls shall be paid at the contract unit price per foot for MEDIAN WALL, CAST-IN-PLACE CONCRETE, which price shall include any special finishes or special forming required, architectural concrete form liners reinforcement, precast stone cap, and protective coat to complete the work as shown on the plans and as specified herein.

AGGREGATE BACKFILL (CA-7)

Description. This work shall consist of backfilling below the landscaped medians and behind the retaining walls with Aggregate Backfill, IDOT Gradation CA-7.

Materials. Backfill material shall be clean angular stone meeting IDOT Gradation requirements for CA-7.

Construction Requirements. Stone shall be placed in maximum 1 foot lifts. Each lift shall be compacted to achieve proper interlocking.

Basis of Payment. This work shall be measured and paid for at the contract unit price per cubic yard for AGGREGATE BACKFILL (CA-7).

ANDROPGON SCOPARIUS (2½"X3" PLUGS) & NARCISSUS 'DUTCHMASTER' (DN I)

Description: This work shall consist of the procurement of grass and bulbs. The work shall be in accordance with Section 254 of the Standard Specifications and the Planting & Maintenance Special Provision.

Basis of Payment: This work shall be paid at the contract unit price per each for ANDROPGON SCOPARIUS (2½"X3" PLUGS) & NARCISSUS 'DUTCHMASTER' (DN I).

INLET FILTERS

Description. This work shall consist of furnishing, installation, and removal of a drainage structure inlet filter assembly, consisting of a frame and filter bag, to collect sediment in surface stormwater runoff in all new and existing structures installed or adjusted within the project limits or as directed by the Engineer.

The Contractor shall inspect the work site and review the plans to determine the number and dimensions of the various types of drainage structure frames (circular and rectangular) into which the inlet filters will be installed prior to ordering materials.

The drainage structure inlet filter assembly shall be installed under the grate on the lip of the drainage structure frame with the fabric bag hanging down into the drainage structure.

The drainage structure inlet filter assembly shall remain in place until final removal of the assembly is directed by the Engineer. Upon project completion, the Contractor shall remove the frame, which shall become property of the Village. The Contractor shall deliver the frame to the Village of Lombard Public Works facility located at 1051 Hammerschmidt Avenue. The filter bag shall be disposed of in a manner meeting the approval of the Engineer. The cost of removal and delivery shall be included in the cost of the unit.

Final removal of the assembly shall include the disposal of debris or silt that has accumulated in the filter bag at the time of final removal. Periodic cleaning of the filter is paid for as INLET FILTER CLEANING.

Materials. The drainage structure inlet filter shall be the "Catch-All", as manufactured by Marathone Materials, Inc. or approved equal.

The drainage structure inlet filter assembly consists of a steel frame with a replaceable geotextile fabric bag attached with a steel band with locking cap that is suspended from the frame. A clean used bag and a used steel frame in good condition, meeting the approval of the Engineer, may be substituted for new materials.

The drainage structure inlet filter assembly frame shall be rigid steel meeting the requirements of ASTM-A36. The frame shall include an overflow feature that is welded to the frame's ring. The overflow feature shall be designed to allow full flow of water into the structure if the filter bag is filled with sediment. The dimensions of the assembly frame shall allow the drainage structure grate to fit into the inlet filter assembly frame opening. The assembly frame shall rest on the inside lip of the drainage structure frame for the full variety of existing and proposed drainage structure frames that are present on this contract.

The drainage structure inlet filter assembly bag shall be constructed of a polypropylene geotextile fabric with a minimum weight of 4 ounces per square yard, a minimum flow rate of 145 gallons per minute per square foot, and designed for a minimum silt and debris capacity of 2 cubic feet. The filter bag shall be reinforced with an outer polyester mesh fabric with a minimum weight of 4 ounces per square yard. The filter bag shall be suspended from the steel frame with a stainless steel band and locking cap. The inlet filter

assembly frame shall not cause the drainage structure grate to extend higher than ¼ inch above the drainage structure frame.

Basis of Payment. The work will be paid for at the contract unit price per each for INLET FILTERS which price shall include all costs for labor, materials, equipment, and incidentals necessary to perform the work.

INLET FILTER CLEANING

Description. This work shall consist of cleaning sediment out of a drainage structure inlet filter when directed by the Engineer. This cleaning work is to be periodically performed as directed by the Engineer, for the duration of the use of each drainage structure inlet filter assembly. The Engineer will be the sole judge of the need for cleaning, based on the rate that debris and silt is collected at each inlet filter location.

Cleaning of the inlet filter shall consist of inspecting, cleaning (includes removal and proper disposal of debris and silt that has accumulated in the filter fabric bag), by vactoring, removing, and dumping or any other method approved by the Engineer.

Method of Measurement. Cleaning of the drainage structure inlet filter shall be measured for payment each time that the cleaning work is performed at each of the drainage structure inlet filter locations.

Basis of Payment. The work will be paid for at the contract unit price per each for INLET FILTER CLEANING, which price shall include all costs for labor materials, equipment, and incidentals necessary to perform the work.

IRRIGATION SYSTEM

PART 1 GENERAL

1.01 SCOPE

A. Provide labor, materials, equipment and services necessary to complete the irrigation work as defined herein and as indicated on the Irrigation Plan and Details. Work shall include, but is not limited to:

1. Complete irrigation system as shown on drawings.
2. Verify underground utility locations.
3. The Contractor shall coordinate work of this section with work of all related trades and subcontractors to assure smooth progression of work.
4. Protection and/or restoration of all existing improvements.
5. Trenching and backfilling for all pipes, valves and drain pits specified.
6. Furnishing and installing all mains, laterals, risers and fittings, sprinkler heads, hot box enclosure, gate valves, control valves, controllers, electric wire, controls, etc., and all necessary specialties and accessories.
7. Furnishing & installing all sleeves beneath walkways, roads, and driveways where required.
8. Testing of irrigation system.
9. Regulating and adjusting sprinkler heads, time sequence control devices and section valves.
10. Maintenance as defined in Specifications.
11. A fully automatic irrigation system that provides complete coverage (100%) of all plantings and lawn areas indicated in the irrigation plans shall be provided.

1.02 QUALITY ASSURANCE

A. Requirements of Regulatory Agencies:

1. All work and materials shall be in full accordance with the latest rules and regulations, including any local plumbing & electrical codes.

2. Should the Contract documents be at variance with the aforementioned rules and regulations, notify the Engineer for instructions before proceeding with work affected.

3. All electrical work furnished and installed under this Section shall be in strict compliance with the ordinances and bylaws of the **Village**, State and/or any other political subdivision thereof governing the installation of the electrical work on this Project. In the absence of other more stringent authority, the electrical work shall conform to the requirements of the National Electrical Code.

4. All equipment shall be U.L. listed.

B. Testing:

1. Preliminary review of completed installation will be made prior to backfilling of trenches and during hydrostatic testing.

2. Final review shall be made in conjunction with the final review of lawn, shrub and tree planting.

A. Permits and Inspections:

1. Any permits for the installation or construction of any work included under this contract, which are required by any of the legally constituted authorities having jurisdiction, shall be obtained and paid for by the Contractor, each at the proper time.

2. The Contractor shall also arrange for and pay all costs in connection with any inspection and examination required by these authorities.

1.03 SUBMITTALS

A. Certificate of Qualification:

Prior to bid acceptance submit certification of installer's experience identifying a minimum four (4) previous projects with names of Owners and Landscape Architects to the Engineer for approval.

B. General

The Contractor shall furnish for review his/her Submittals as outlined herein and in the Specifications. Submittals shall confirm compliance with the requirements of the Contract Documents. Submittals of equipment drawings shall be made prior to the fabrication of the equipment. The sequence of submission shall be such that information is available for review of each Submittal when it is received. All Submittals furnished formally shall bear an approval stamp or a certification. The stamp or certification shall be signed by an authorized representative of the Contractor. The Contractor's stamp or certification on any Submittals shall constitute

a representation to the Owner that the Contractor has either determined and verified all quantities, dimensions, field construction criteria, materials, catalog numbers, and similar data, or that he/she assumes full responsibility for doing so, and that he/she has reviewed and coordinated each Submittal with the requirements of the Contract Documents. Before submitting any drawings for review, the Contractor shall obtain approval of the list of drawings he/she proposes to submit, showing sequence of submittal and submittal dates. All drawings shall be submitted in accordance with a Submittal Schedule furnished by the Contractor.

C. Outline Drawings

The Contractor shall submit outline drawings of the equipment to be furnished together with estimated weights, operating forces, external forces, anchoring details, and sufficient overall dimensions, to facilitate preparation of final designs of the structures into which the equipment is to be incorporated.

D. Wiring Diagrams

The Contractor shall submit complete schematic and full-line wiring diagrams for all equipment furnished by him/her. The Contractor shall furnish drawings of switch developments for all instrument and control switches and internal connection diagrams for all instruments, relays, regulators, and other devices. One print of each wiring diagram will be returned on which will be marked the wire notations and cable numbers for outgoing circuits where this information is not otherwise available to the Contractor. The Contractor shall add this information to his/her drawings. Adequate space shall be allowed on the wiring diagrams to accomplish this.

E. Detail Drawings and Erection Drawing

Before proceeding with fabrication or manufacture of the material and equipment designed and furnished by him/her, the Contractor shall submit the designs, design computations when requested, apparatus ratings, detailed specifications, general assembly drawings, sufficient subassembly drawings, details, and control and wiring diagrams to demonstrate fully that all parts will conform to the provisions and intent of the Contract Documents and to the requirements of their installations, operations, and maintenance. These drawings shall substantially conform to the Bid and Contract Drawings and shall show all necessary dimensions; all field joints and subassemblies in which the Contractor proposes to ship the equipment; locations and sizes of auxiliary connections for oil, grease, water and air; and the terminal boxes and wire sizes for electrical circuits. Before proceeding with fabrication or purchase, the Contractor shall submit shop drawings and/or catalog cuts as appropriate of items designed but not detailed on the Contract Drawings including, but not limited to structural steel and metal frames, covers, and gratings.

F. Field Detail Drawings

Layout drawings for any and all embedded components of the equipment such as but not limited to, piping, conduit, anchor bolts/plates, thimbles, etc. shall be

submitted. These drawings shall be based on the Contract Drawings and shall contain sufficient detail for construction in the field.

G. Review of Drawings

1. Four print copies on durable paper with dark lines on a white background and one durable paper type reproducible shall be furnished of each drawing submitted. All drawings submitted shall, insofar as practicable, be of one standard size, measuring approximately 24 x 36 inches. The Contractor's drawings shall have a blank area of 4 x 4 inches adjacent to the drawing title block for the review stamp of the Engineer. The Contractor shall verify by inspection of sample reproductions that good legible reproductions can be obtained from the reproducible before submittal.

2. Within three weeks of receipt of shop drawings or manufacturer's data, the Owner's Representative will return one copy of each drawing and/or data sheet marked to indicate the result of the Engineer review, as follows:

   a. "REVIEWED" - Revision of drawing or data will not be required.
   b. "REVIEWED WITH CORRECTIONS" - Contractor shall revise the drawings or data and shall submit four print copies and one reproducible copy for Owner's Representative's records.
   c. "REVISE AND RESUBMIT" - Contractor shall revise the drawing or data and shall resubmit the revised drawing or data to the Engineer for review.
   d. "REJECTED" - Drawings are non-conforming and do not meet intent of Specifications.

3. Copies marked "REVIEWED" or "REVIEWED WITH CORRECTIONS" authorize the Contractor to proceed with construction or fabrication covered by those drawings or data sheets with corrections, if any, incorporated.

4. Review will not relieve the Contractor of responsibility for conformity to the Contract Documents and correct detail and fit of parts when installed.

5. If minor revisions are made after a drawing has been returned to the Contractor marked "REVIEWED", the Contractor shall furnish without delay one print copy and one reproducible copy subsequent to each revision. No major revision affecting the design shall be made after a drawing has been marked "REVIEWED" without resubmitting the drawing.

6. When prints of drawings have been marked "REVIEWED WITH CORRECTIONS" or "REVISE AND RESUBMIT" the Contractor shall make the necessary corrections and submit four print copies and one paper-type reproducible. Every revision shall be shown by number, date, and subject in a revision block, and in addition, each revised drawing shall have its latest revision clearly indicated. Submitted drawings which do not illustrate these indications will be considered non-conforming.

7. The applicable parts of the requirements of the above paragraphs with reference to the drawings shall apply equally to design data, catalog cuts, illustrations, printed specifications, draft reports or any other submittals furnished for review.

8. The Contractor shall make any changes in the designs which are necessary to make the equipment conform to the provisions and intent of the Contract Documents, without additional cost to the Owner.

9. Should an error be found in a Contractor's drawing during the erection of structures or installation of equipment, the correction, including any field changes found necessary, shall be noted on the drawing, and it shall be resubmitted for review, and recorded as outlined above.

10. Any drawing review services performed by the Engineer beyond that of the second submittal (for a specific item of equipment or material to be furnished) shall be at the Contractor's own expense.

H. Contractor shall furnish three (3) Manufacturer's service manuals to the Engineer. Manuals may be loose-leaf and shall contain complete exploded drawings of all equipment installed showing components and catalog numbers together with the manufacturer's name and address.

I. Loose Equipment to Furnish:

Loose sprinkler equipment, operating keys and spare parts shall be furnished by the Irrigation Contractor in quantities as shown on the plans.

1. Two (2) keys for each controller.

2. Two (2) sets of special tools required for removing, disassembling and adjusting each type of sprinkler and valve supplied on this project.

3. Two (2) cover lifting tools for valve boxes.

J. Record Drawings

The Contractor shall maintain one record set of blueline prints of the irrigation system in good condition at the site and mark on them the exact "Record". The Contractor shall make a daily record of all work installed during each day. Plans shall indicate the exact location of check valves, gate valve, wire locations, head layout, automatic valves, quick couplers, all irrigation and drainage piping etc., shall be shown on the prints. Locations should be shown by the triangular system of measurements from easily identified permanent features, such as buildings, curbs, fences, walks, etc. Drawings shall show approved substitutions, if any, of material including Manufacturer's name and catalogue number. Upon completion all information noted on the prints shall be transferred to a reproducible mylar by the Contractor. Drawings shall be to scale and all information shall be recorded in a neat, orderly way.

1. At the time of the irrigation mainline test, the Contractor shall provide a preliminary set of "Record" drawings to the Engineer.

2. On or before the date of final inspection, the Contractor shall deliver one (1) reproducible mylar and two (2) sets of blueline prints of the "Record" drawings to the Engineer.

3. The delivery of prints shall not relieve the Contractor of the responsibility of furnishing required information that may have been omitted.

K. Substitutions:

1. The Contractor shall use materials as specified on the irrigation plan. Material other than that specified will be permitted only after written application by Contractor and written approval by the Engineer.

2. Substitutions will only be allowed when in the best interest of the Village of Lombard.

3. Installation of any approved substitution is the Contractor's responsibility. Any changes required for installation of any approved substitution must be made to the satisfaction of the Engineer and without additional cost to the Contractor.

1.04 JOB CONDITIONS

A. Examination of Site:

The bidder acknowledges that he has examined the site, plans and specifications and the submission of a quotation shall be considered evidence that examinations have been made.

B. Field Conditions:

The Contractor shall verify drawing dimensions with actual field conditions and inspect related work and adjacent surfaces. The Contractor shall report to the Engineer all conditions which prevent proper execution of his work.

A. The exact location of all existing utilities, structures and underground utilities, which may not be indicated on the drawings, shall be determined by the Contractor and he shall conduct his work so as to prevent interruption of service or damage to them. The Contractor shall protect existing structures and utility services and be responsible for their replacement if damaged by him.

B. The Contractor shall verify the correctness of all finish grades within the work area to insure the proper soil coverage of the sprinkler system pipes.

1.05 MATERIALS, STORAGE AND CLEAN-UP

A. The Contractor shall keep the premises free from rubbish and all debris at all times and shall arrange his material storage so as not to interfere with the operation of the project. All unused materials, rubbish and debris shall be removed from the site.

1.06 COMPLETION AND ACCEPTANCE

A. The completion of the contract will be accepted and Notice of Completion recorded only when the entire contract is completed to the satisfaction of the Engineer.

B. Within Ten (10) days of the Contractor's notification that the installation is complete, the Engineer will inspect the installation and, if final acceptance is not given, will prepare a "punch list".

C. Final Acceptance

Work under this Section will be accepted by the Engineer upon satisfactory completion of all work including "punch list" items.

1.07 WARRANTY

A. The entire irrigation system shall be unconditionally guaranteed by the Contractor as to material and workmanship, including settling of backfilled areas below grade for a period of one (1) year following the date of final acceptance of work and he hereby agrees to repair or replace any such defects occurring within that year at his expense.

B. It shall be the Irrigation Contractor's responsibility to insure complete coverage as specified herein of the areas to be irrigated. During the warranty period the Irrigation Contractor shall make any adjustments as necessary to maintain proper coverage.

C. If, within one year from the date of completion, settlement occurs, and adjustments in pipes, valve and sprinkler heads, lawn areas or paving are necessary to bring the system, grade or paving to the proper level of the permanent grades. The Contractor, as part of the work under his Contract, shall make all adjustments without extra cost to the Village of Lombard including the restoration of all damaged planting, paving or other improvements of any kind.

Should any operational difficulties in connection with the irrigation system develop within the specified guarantee period, which, in the opinion of Village of Lombard may be due to inferior material and/or workmanship, said difficulties shall be immediately corrected by the Contractor to the satisfaction of the Village of Lombard at no additional cost to the Village of Lombard, including any and all other damages caused by such defects.

1.08 OPERATION AND MAINTENANCE-IRRIGATION SYSTEM

A. Important: It is the Landscape Contractor's responsibility to determine water application rates and time cycling. The irrigation contractor will instruct the Landscape Contractor on the operation and programming of the controller and will assist the Landscape Contractor as necessary in such operations throughout the one year maintenance period. Any adjustments, repairs, etc., other than programming are the total responsibility of the Irrigation Contractor.

B. The Irrigation Contractor shall maintain the irrigation system for a period of not less than one (1) year commencing from the time the installation is complete to the satisfaction of the Engineer.

PART 2 PRODUCTS

2.01 GENERAL

All materials to be incorporated in this system shall be new and without flaws or defects and of quality and performance as specified and meeting the requirements of this system.

2.02 BACKFLOW PREVENTOR & HOT BOX ENCLOSURE

The backflow preventor shall be Febco 825Y or approved equal in enclosure. The hot box enclosure shall be hot box model #HB23. Installation must be as provided on detail sheet.

2.03 PIPE

All piping shall be from virgin parent material. The pipe shall be homogeneous throughout and free from visible cracks, holes, foreign materials, blisters, deleterious wrinkles and dents. All pipe shall be National Sanitation Foundation (NSF) approved.

A. Piping on pressure side of irrigation control valves:

1. Shall be Polyvinyl Chloride (PVC) 1120 with a minimum class rating of 160, sized to maintain a flow velocity of less than five feet (5') per second (FPS).

2. Type I, Grade I, Pressure Rated Pipe.

3. Materials shall meet the requirements set forth in ASTM-D-1784-60T.

4. Outside diameter of pipe shall be same size as iron pipe.

5. Pipe shall be marked at intervals (not to exceed 5') with the following information: Manufacturer's name or trademark, nominal pipe size, schedule. PVC type and

grade (i.e. PVC 1120), SDR rating class, working pressure at 73 degrees F and (NSF) approval.

6. PVC Type I shall not be threaded.

7. Caution should be utilized in handling Type I pipe due to the possibility of cracking or splitting when dropped or handled carelessly.

8. When connection is plastic to metal, male adapters shall be used. The male adapter shall be hand tightened, plus one turn with a strap wrench.

B. Piping on non-pressure side of irrigation control valves shall be one of the following:

1. Polyvinyl Chloride (PVC) 1120 with a minimum class rating of 160, NFS approved, sized to maintain a flow velocity of less than five feet (5') per second (FPS).

C. Piping for Sleeving:

High impact type pipe, polyvinyl chloride (PVC) 1120 class rating 160 or as shown on the Drawings.

2.04 SOLVENT

Solvent for PVC shall be #705 Gray NSF approved as manufactured by Industrial Polychemical Service, Gardena, CA (213) 321-6515 or equal.

2.05 FITTINGS

A. Fittings for Solvent-Weld PVC Pipe:

1. Schedule 80, polyvinyl chloride (PVC), Type 1, to meet ASTM D246-73 and D-2467-73 NSF approved.
Manufactured by the following:
Lasco, Anaheim, CA (714) 993-1220
Spears, Sylmar, CA (818) 364-1611

2. Threaded PVC nipples shall be schedule 80.

2.06 VALVE BOXES

To be injection-molded of polyesters and fibrous inorganic temperature resistant components. Box and lid to be green, manufactured by one of the following:

- Ametek, Sheboygan, WI (414) 457-9435
- Carson Industries, Inc., Laverne, CA (818) 332-6225

A. For Remote Control Valve: Shall be 10" circular and sized to provide adequate clearance to operate and service valve.

2.07 SPRINKLER HEADS

570Z Series Sprinklers: The sprinkler shall be of the fixed-spray type designed for in-ground installation. The sprinkler shall be capable of accepting all 570 Series spray, stream, flood, and microspray nozzles and male-threaded risers and extenders. The sprinkler shall operated within a 20-75 PSI pressure range.

The body and cap of the sprinkler shall be injection molded from ABS, a non-corrosive, impact-resistant, UV-resistant, heavy-duty plastic material. The sprinkler shall have a color-coded riser screen filter, stainless steel or plastic, appropriately sized to prevent entry of foreign material to the nozzle. All parts shall be removable through the top of the sprinkler case.

The sprinkler shall have a single-piece riser/body seal, that flushes only upon retraction to clear any debris from around the riser, and a stainless-steel spring to ensure positive retraction. The seal shall have no flush during pop-up to allow the maximum number of sprinklers per station. The seal shall be a single piece injection molded from Alcryn, synthetic rubber.

The sprinkler shall be capable of nozzle alignment via a two-piece ratcheting riser. The sprinkler shall be available in models with a check valve or standard models shall be capable of accepting a check valve that will prevent low-head drainage with elevation differences up to 7'. A ½" NPT plug shall be provided with all side inlet models to plug the unused inlet.

A biodegradable debris label shall be factory-installed to eliminate debris intrusion during installation and line flushing.

A lavender effluent water use indicator shall be available and capable of snap fitting to all sprinkler caps.

570Z-3P: The sprinkler shall be of pop-up design with an overall body height of 4 7/8", a body diameter of 1 3/8", a cap diameter of 2", and having a pop-up stroke of 3 ¼".

The sprinkler shall be developed and manufactured by an ISO 9002-certified facility. The sprinkler shall be a model 570Z Series and shall be manufactured by The Toro Company, Irrigation Division, Riverside, California, USA.

2.08 SPRAY NOZZLES

Spray nozzles for sprinkler heads, if required, shall be of the same manufacturer as the sprinkler head.

2.09 AUTOMATIC CONTROLLER

The irrigation system controller shall use dial hybrid control technology and be capable of automatic, semi-automatic and manual operations. All programming shall be accomplished by use of a simple programming dial and selection buttons with a large LCD for ease of programming. It shall be housed in a plastic weatherproof, locking enclosure suitable for indoor or outdoor use. It shall have a manufacturer's limited warranty of 5 years.

The controller shall have 4 stations with four independent programs that can run simultaneously and with each stations watering time independently variable from one minute to 10 hours in one-minute increments. The controller shall have 16 total start times assignable to any program(s). The controller shall stack (put on hold) start times to prevent overlap within a program. If two (or more) start times are programmed, causing watering times to overlap, the controller will stack the additional start time and run it when the first cycle finishes.

The controller shall have a seven-day calendar, odd/even day or interval options of one to 30 days. The controller shall have a 365-day calendar for true unattended odd/even day programming with excluded day option when used with the odd/even day option and shall have automatic leap year compensation. Time-of-day, day-of-week, programming and operational status information shall be shown in a large LCD display. The master valve shall be programmable by program. The controller shall be year-2000 compliant.

The controller shall have a Season Adjust feature that allows the independent adjustment of each irrigation program from 10% to 200% in 10% increments without permanently altering the program. The controller shall have a programmable Off/Rain Delay setting to allow all programs to be disabled permanently or for a specified period of one to seven days. At the end of the specified rain delay period, the controller will automatically resume normal operation. The controller shall have a Rain Off position on the dial, which will immediately turn off station watering and prevent future automatic watering to occur while the dial is set in this mode. The controller shall have a program erase feature which erases all programmed station run times, start times, water days, resets season adjust to 100% and resets the master valve to On for a selected program.

The controller shall have a manual-start feature that allows all or independently selected stations to be run on a program. The controller shall also have true manual single station On/Off capability. When a program is running (automatic or manually started), the controller will display the currently running program, the currently running station, time remaining on the running station and status of the master valve. While operating in the manual mode, the user may adjust the run time of the current station, pause and resume the current station, advance directly to the next station or cancel the cycle. Run-time adjustments made while a program is operating in the manual mode shall not affect normal program memory.

The controller shall have a sensor port compatible with normally open, switch-type sensors. The controller will suspend automatic program operation when the sensor is active. The controller shall have an integrated bypass switch on the front panel to allow the operation of automatic programs while the sensor is active (open).

The controller shall have a self-diagnostic electronic circuit breaker with valve-short detection that identifies and overrides an electrical malfunction and shall continue to operate all other stations in the program in sequence. The controller shall display the problem station until the operator resets the controller. The controller shall have the SurgePro[a] System, which consists of heavy-duty surge protection consisting of MOVs and inductors.

The controller shall use a standard 9-volt alkaline battery for real-time clock retention in the event of a power failure. The battery will be included with the clock. The controller shall maintain the real-time clock and date for 90 continuous days with a fully charged alkaline battery. The battery saving option places the controller in a shut down mode while maintaining the real time clock. Program data shall be stored in non-volatile memory that will be retained faithfully for a minimum of thirty years without power. The controller shall have a snap-out program module for off-site programming when battery is installed.

The controller shall have a Valve Test Terminal (Hot Post). The controller shall have a power input of 120 V a.c. (±10%) or 220 V a.c. + 10% and be capable of operating up to two 24 V a.c. solenoids per station at 0.50 amperes (12 VA). In addition, the controller shall be capable of running a 24 V a.c. Pump/Master Valve output circuit at 0.5 amperes (12 VA). The controller shall be capable of running up to four 24 V a.c. solenoids plus a master valve at 1.24 amperes. The controller shall allow the selective use of the Pump/Master Valve circuit by station. Total controller output load shall not exceed 1.25 amperes (30 VA) at 24 V a.c.

The controller shall be developed and manufactured by an ISO 9002-certified facility. The controller, model number GK212-04-OD, shall be manufactured by The Toro Company, Irrigation Division, Riverside, California, USA. or equal.

2.10 ELECTRIC CONDUIT AND FITTINGS

Rigid Galvanized Steel Conduit, at required depth.

2.11 CONTROL

Wire: Solid copper wire. U.L. approved for direct burial in ground. Minimum gauge: #14 UF. (#12 UF for runs over 1,000 LF.) Common ground wire shall be white.

2.12 SPLICING MATERIAL

Splicing Materials: 3M Direct Bury (DBY) splice kits by 3M Corporation, Austin, TX (812) 984-5657.

2.13 REMOTE CONTROL VALVES

The 252 Series valve shall be of globe configuration with a female-threaded inlet and outlet. The valve cap shall be constructed of glass-filled Zytel® for stability under pressure. The 1 ½" and 2" valves shall have a stainless-steel valve seat for maximum durability. The diaphragm shall be of single-piece rubber construction to retain flexibility and provide maximum sealing throughout its area. The valve shall have a fabric-reinforced diaphragm on 1 ½" and 2" models and a rubber diaphragm on 1" models. The diaphragm assembly shall form a solid-piece component.

The valve shall have a forward-flow design and an external manual downstream bleed/flush. The valve shall have manual flow control with a hand-operated, rising-type flow-control stem with a control wheel/handle. For 1" models, friction loss at 40 GPM shall not exceed 7.5 PSI on electric, angle valves and 9.5 on electric, globe valves. For 1 ½" models, friction loss at 120 GPM shall not exceed 11.0 PSI on hydraulic, angle valves; 13.5 PSI on hydraulic, globe valves; 9.0 PSI on electric, angle valves; and 15.0 PSI on electric, globe valves. For 2" models, friction loss at 180 GPM shall not exceed 6.0 PSI on hydraulic, angle valves; 11.0 PSI on hydraulic, globe valves; 7.0 PSI on electric, angel valves; and 11.0 PSI on electric, globe valves. The burst pressure safety rating shall be 750 PSI.

An effluent flow-control knob and BSP threads shall be available options.

The valve shall be normally closed by internal water pressure. A 24" solenoid lead wire shall be attached to a removable 24 V a.c., 50/60 Hz solenoid with a waterproof coil. The valve shall have a self-cleaning, stainless-steel metering pin to protect bleed ports and purge contaminants.

PART 3 EXECUTION

3.01 GENERAL

A. The Irrigation Contractor shall carefully schedule his work with the Landscape Contractor and all other site developments.

B. Sleeves are required wherever piping or electrical wires are placed under paved surfaces. Install sleeves prior to commencement of paving.

C. No consideration will be given to any design changes. Should any changes be deemed necessary after award of contract, for proper installation and operation of the system, such changes shall be negotiated by the Engineer.

D. Lay out work as accurately as possible to drawings. Drawings are diagrammatic to the extent that swing joints (QCV), offsets and all fittings are not shown.

E. Full and complete coverage is required. Contractor shall make any necessary minor adjustments to layout as required to achieve full coverage of irrigated areas at no additional cost to the Village of Lombard.

F. Where piping is shown on drawings to be under paved areas but running parallel and adjacent to planted areas, the intent is to install piping in planted areas. Do not install directly over another line in same trench.

G. It shall be the Contractor's responsibility to establish the location of all sprinkler heads in order to assure proper coverage of all areas. In no case shall spacing of sprinkler heads exceed distances shown on the drawings and/or those specified. Pipe sizes shall conform to those shown on the drawings. No substitutions of smaller pipe sizes will be permitted, but substitutions of larger sizes may be reviewed. All pipe damaged or rejected because of defects shall be removed from the site at the time of said rejection.

H. Install irrigation system after completion of site grading, the irrigation system shall be installed and completely operational three days prior to the installation of any planting operations.

3.02 TRENCHING

A. Perform all excavations as required for installation of work included under this Section, including shoring of earth banks, if necessary. Restore all surfaces, existing underground installation etc., damaged or cut as a result of the excavations, to their original condition.

B. Should utilities not shown on the plans be found during excavations, Contractor shall promptly notify the Engineer for instructions as to further action. Failure to do so will make Contractor liable for any and all damage thereto arising from his operations subsequent to discovery of such utilities. Indicate such utility crossings on the record drawings promptly.

C. Trenches shall be open, vertical sided construction wide enough to provide free working space around work installed and to provide space for backfilling and compacting.

D. When two (2) pipes are to be placed in the same trench, a three inch (3") space is to be maintained between the pipes. The Contractor shall not install two pipes with one directly above the other.

E. Trenches located under paving shall be backfilled with sand (a layer six inches (6") below the pipe and three inches (3") above the pipe) and compacted in layers of 95% compaction. Depth of trenches shall be sufficient to provide a minimum cover above the top of the pipe as follows:

12" over non-pressure lateral lines
18" over non-pressure lateral lines under paving
18" over control wires
18" over sprinkler main line
24" over sprinkler main line under paving

F. The Contractor shall cut trenches for pipe to required grade lines and compact trench bottom to prove accurate grade and uniform bearing for the full length of the line.

G. All laterals and mainline shall be sufficiently sloped to provide positive drainage through drain valves.

H. The Contractor shall be held responsible for any damage caused by these operations and shall immediately repair or replace damaged parts.

3.03 PIPE LINE ASSEMBLY

A. General

1. Install pipes and fittings in accordance with manufacturer's latest period instructions.

2. Clean all pipes and fittings of dirt, scales and moisture before assembly.

3. All pipe, fittings and valves, etc., shall be carefully placed in the trenches. Interior of pipes shall be kept free from dirt and debris and when pipe laying is not in progress, open ends of pipe shall be closed by approved means.

4. All lateral connections to the mainline as well as al other connections shall be made to the side of the mainline pipe. No connections to the top of the line shall be allowed.

B. Solvent-Weld Joints for PVC Pipes:

1. Use solvents and methods by pipe and solvent manufactures.

2. Cure joint a minimum of one hour before applying any external stress on the piping and at least twenty-four (24) hours before placing the joint under water pressure, unless otherwise specified by manufacturer.

C. Threaded Joints for PVC Pipes:

1. Use Teflon Tape on all threaded PVC fittings.

2. Use strap-type friction wrench only. Do not use metal jawed wrench.

3. When connection is plastic to metal, male adapters should be used. The male adapter shall be hand tightened, plus one turn with a strap wrench.

D. Laying of Pipe:

1. Pipes shall be bedded in at least two inches (2") of finely divided material with no rocks or clods over one inch (1") diameter to provide a uniform bearing.

2. Pipe shall be snaked from side to side of trench bottom to allow for expansion and contraction. One additional foot per 100 feet of pipe is the minimum allowance for snaking.

3. Do not lay PVC pipe when there is water in the trench.

4. Plastic pipe shall be cut with PVC pipe cutters or hacksaw, or in a manner so as to ensure a square cut. Burrs at cut ends shall be removed prior to installation so that a smooth unobstructed blow will be obtained.

5. All plastic to plastic joints will be solvent-weld joints or slip seal joints. All plastic pipe fittings shall be installed as outlined and instructed by the pipe manufacturer and it shall be the Contractor's responsibility to make arrangements with the pipe manufacturer for any field assistance that may be necessary. The Contractor shall assume full responsibility for the correct installation.

6. All PVC electrical conduit shall be of sufficient size to hold the required quantity of wires. Electrical wires are not to be placed in the same sleeve with water pipes.

E. Thrust Blocks:

1. Cast-in-place concrete thrust blocks must be provided on the thrust side of the mainline pipe wherever the pipe line:

   a. Changes direction, as at tees or bends.
   b. Dead ends.
   c. Any other spot where thrust is to be expected.

3.04 IRRIGATION CONTROL VALVES

A. Install control valves in valve boxes grouping together where practical. Place no closer than twelve inches (12") to walk edges, buildings and walls.

B. Remote control valves shall be adjusted so that the most remote sprinkler heads operate at the pressure specified.

C. Valves shall be installed as shown in details and in accordance with manufacturer's instructions and specifications.

3.05 VALVE BOXES

Valve boxes shall be set flush with finish grade lawn areas and one half inch (1/2") above finish grade in ground cover and shrub bed areas.

3.06 SPRINKLER HEADS

A. All sprinkler heads within a zone shall have matched precipitation above.

B. All heads operating on one valve (zone) shall do so at the same pressure.

C. All heads shall be pop-up type heads. Permanent shrub risers are not permitted.

D. All sprinkler nozzles shall be adjusted for the proper radius and direction of spray pattern. Make adjustments where possible to prevent overspraying onto walks, pavement or buildings.

E. Sprinkler heads shall be set perpendicular to finished grade unless otherwise designated on the plans.

F. Sprinkler heads shall be installed according to detail sheet.

3.07 DRAIN VALVES

A. All laterals shall be provided with automatic valves.

B. Drain valves are to be provided at sufficient intervals, to provide complete drainage of all piping.

3.08 AUTOMATIC CONTROLLER

A. The automatic controller shall be installed at the approximate location shown on the plan. Controller shall be installed in an electrical control cabinet.

B. All local and other applicable codes shall take precedence in connecting the 110 volt electrical service to the controller.

C. Install per local code, manufacturers latest printed instructions.

D. Connect remote control valves to controller in sequence to correspond with station setting beginning with stations 1, 2, 3, etc.

E. Affix controller name on inside of controller cabinet door with letters minimum of one inch (1") high. Affix a non-fading copy of irrigation diagram to cabinet door below controller name. Irrigation diagram to be scaled between two sheets of 20 mil (minimum) plastic. Irrigation diagram shall be a reduced copy of the as-built drawing and shall show clearly all valves operated by the Controller, showing station number, valve size and type of planting irrigated.

3.09 CONTROL WIRING

A. All electrical equipment and wiring shall comply with local and state codes and be installed by those skilled and licensed in the trade.

B. Wiring shall occupy the same trench and shall be installed along the same route as pressure supply or lateral lines wherever possible, and shall have a minimum of eighteen inch (18") cover.

C. Control wires shall be installed to the side of the main line whenever possible. Placement over pipes is not permitted.

D. Where more than one (1) wire is placed in a trench, the wiring shall be taped together at intervals of ten feet (10').

E. An expansion curl shall be provided within three feet (3') of each wire connection and at least every one hundred feet (100') of wire length on runs of more than one hundred feet (100') in length. Expansion curls shall be formed by wrapping at least five (5) turns of wire around a one inch (1") diameter pipe, then withdrawing pipe.

F. Control wire splices at remote control valves to be crimped and sealed with specified splicing materials. Line splices will be allowed only on runs of more than 500 feet and they must be located in ten inch (10") round splice boxes which are green in color. The connector shall be 3MD by splice kit by 3M Corporation. Use one splice per connector sealing packs.

G. The main line shall have two (2) spare wires installed its entire length and to the automatic controller. Label each end "spare wire".

3.10 CLOSING OF PIPE AND FLUSHING OF LINES

A. All testing shall be done under the observations of the Engineer. Submit written requests for inspections to the Engineer at least three (3) days prior to anticipated inspection date.

1. Thoroughly flush out all water lines under a full head of water before installing heads, valves, quick coupler assemblies, etc. maintain flushing for a minimum of three (3) minutes at the valve located furthest from water supply.

2. After flushing, cap or plug all openings to prevent entrance of materials that would obstruct the pipe or clog heads. Leave in place until removal is necessary for completion of installation.

3. Test as specified below.

4. Upon completion of testing, complete assembly and adjust sprinkler heads for proper distribution. All sprinkler heads and quick coupling valves shall be set perpendicular to finished grade unless otherwise designated o the drawings, or otherwise specified. Sprinkler heads adjacent to existing walls, curbs and other paved areas, shall be set to grade. Sprinkler heads which are to be installed in lawn areas where the turf has not yet been established shall be set one half inch (1/2") above the proposed finished grade. Heads installed in this manner will be lowered to grade when the turf is sufficiently established to allow walking on it

without appreciable destruction. Such lowering of heads shall be done by this contractor as part of the original contract with no additional cost to the contract.

3.11 TESTING

A. Make hydrostatic tests when welded PVC joints have cured as per manufacture's instructions.

1. Pressurized Mains:
   a. Completely install mains, isolation valves and control valves. Do not install laterals.
   b. Open all isolation valves.
   c. Fill all lines with water and shut off at meter.
   d. Pressurize the main with air to 70 PSI. monitor gauge for pressure loss for four (4) hours.
   e. Leave line and fittings exposed throughout testing period.
   f. Leaks resulting from test shall be repaired and test repeated until the system passes.
   g. Test all isolation valves for leakage.

2. Non-pressure Laterals:
   a. Test piping after laterals and risers are installed and system is fully operational. Leave trenches open to detect possible leaks.

3.12 INSPECTION

A. The Contractor shall maintain proper facilities and provide access for inspection to all parts of the work.

B. Irrigation inspection shall consist of a minimum of:

1. Mainline pressure test
2. Coverage Test
3. Final irrigation inspection

C. If the specifications, the Engineer's instructions, laws, ordinances or any public authority requires any work to be specifically tested or approved, the Contractor shall give the Engineer three (3) days notice of its readiness for inspection.

D. The Contractor shall be solely responsible for notifying the Engineer where and when such work is in readiness for testing.

E. If any work should be covered up without approval of the Engineer, it must be uncovered, if required, for examination at Contractor's expense.

F. No inspection will commence without "Record" drawings and without completing previously noted corrections, or without preparing the system for inspection.

3.13 BACKFILLING AND COMPACTING

A. After system is operating and required tests and inspections have been made, backfill excavations and trenches.

B. Backfill for all trenches, regardless of the type of pipe covered, shall be compacted to minimum 95 percent density under pavements, 85 percent under planted areas.

C. Backfill material shall be approved soil. Unsuitable material, including clods and rocks over two inches (2") in size shall be removed from the site.

D. A fine granular material shall be placed initially on all lines with a minimum of three inches (3") cover. Loose, granular topsoil from excavated material may be used provided that no foreign matter larger than one-half inch (1/2") in size shall be permitted in the initial backfill.

E. Trenches located under paving shall be backfilled with sand (a layer six inches (6") below the pipe and three inches (3") above the pipe) and compacted in layers of 95 percent compaction in accordance with ASTM-D-1557.

F. Compact trenches in areas to be planted, by thoroughly flooding the backfill.

G. Within all planting and lawn areas the existing four inch (4") layer of topsoil shall be restored to its original condition and finish grade.

H. The Contractor shall dispose of surplus earth remaining after backfilling off-site.

3.14 MAINTENANCE

Contractor shall drain irrigation system the fall after installation & activate the following spring as part of this contract work.

PART 4 MEASUREMENT AND BASIS OF PAYMENT

4.01 MEASUREMENT AND BASIS OF PAYMENT

This work shall be measured and paid for at the contract unit price for IRRIGATION SYSTEM as shown on the Median Irrigation Plan, Median Irrigation Details and Specifications contained herein.

ELECTRICAL SERVICE AND DISTRIBUTION FOR IRRIGATION SYSTEM

PART 1 GENERAL

1.01 SCOPE

This Section covers the requirements for the furnishing, installing and connecting of a complete working installation of the electrical service and distribution system as outlined or specified in detail in other parts of this Section, other related Sections and/or as shown on the Drawings. It should be noted that this Section of the Specification may include some items which are not required for, or related to, the completion of the electrical work for this Project. The Contractor shall coordinate the requirements of the various parts of this Section of the Specifications with the Drawings when ordering materials or performing Work in conformance with the applicable provisions of this Section. Related Work includes Irrigation System, Complete. Contractor is responsible for contacting Com Ed for service request and coordinating the installation of the primary cables, main circuit breaker, enclosure, meter fitting and all conduit and secondary wire.

PART 2 PRODUCTS

2.01 ELECTRICAL SERVICES

A. Commonwealth Edison Company will furnish electrical service at 120 volt, single (1) phase, two (2) wires, 60 Hertz. Locations of new service is as shown on the Drawings.

B. The Contractor's responsibility for this work shall be to furnish the meter fitting, main service disconnect and enclosure, ground rod, secondary voltage cables and conduit from the new service to the proposed irrigation controller cabinet. Commonwealth Edison will furnish and install the meter and will furnish connectors and make connections to primary cables.

PART 3 EXECUTION

3.01 GENERAL

A. The methods of installation of Contractor furnished equipment and materials are described in related Sections of these Specifications and as shown on the Drawings, and shall in general be in accordance with the manufacturer's and/or Commonwealth Edison's standard procedures and recognized engineering practices.

B. The intent of these Specifications is to provide new electrical service to the irrigation control cabinet and enclosure.

PART 4 MEASUREMENT AND BASIS OF PAYMENT

4.01 MEASUREMENT AND BASIS OF PAYMENT

A. Separate payment will not be made for any items of work under this Section. All costs associated with such Work shall be considered incidental and shall be included in the price bid for IRRIGATION SYSTEM .

B. The Village of Lombard shall be responsible for fees assessed by the Utility Company for the installation of the primary electrical service.

TRAFFIC SIGNAL SPECIFICATIONS

Effective: January 1, 2002 Revised: May 22, 2002

These Traffic Signal Special Provisions and the "District 1 Standard Traffic Signal Design Details" supplement the requirements of the State of Illinois "Standard Specifications for Road and Bridge Construction." The intent of these Special Provisions is to prescribe the materials and construction methods commonly used for traffic signal installations. All material furnished shall be new. The locations and the details of all installations shall be as indicated on the Plans or as directed by the Engineer. The work to be done under this contract consists of furnishing and installing all traffic signal work as specified in the Plans and as specified herein in a manner acceptable and approved by the Engineer.

SECTION 720 SIGNING

MAST ARM SIGN PANELS.

Add the following to Section 720.02 of the Standard Specifications:

Signs attached to poles or posts (such as mast arm signs) shall have mounting brackets and sign channels which are equal to and completely interchangeable with those used by the District Sign Shops. Signfix Aluminum Channel Framing System is currently recommended, but other brands of mounting hardware are acceptable based upon the Department's approval.

SECTION 800 ELECTRICAL

INSPECTION OF ELECTRICAL SYSTEMS.

Add the following to Section 802.01 of the Standard Specifications:

All cabinets including temporary traffic signal cabinets shall be assembled by an approved equipment supplier in District One. The Department reserves the right to request any controller and cabinet to be tested at the equipment supplier facilities prior to field installation, at no extra cost to this contract. All railroad interconnected (including temporary railroad interconnect) controllers and cabinets shall be new, built, tested and approved by the controller equipment vendor, in the vendor's District One facility, prior to field installation. The vendor shall provide the technical equipment and assistance as required by the Engineer to fully test this equipment.

DAMAGE TO TRAFFIC SIGNAL SYSTEM.

Revise Section 802.02 of the Standard Specifications to read:

Any damaged equipment or equipment not operating properly from any cause whatsoever shall be repaired with new equipment provided by the Contractor at no additional cost to the Contract and or owner of the traffic signal system, all as approved by the Engineer. Final repairs or replacement of damaged equipment must meet the approval of the Engineer prior to or at the

time of final inspection otherwise the traffic signal installation will not be accepted. Cable splices outside the controller cabinet shall not be allowed.

RESTORATION OF WORK AREA.

Add to Section 802 of the Standard Specifications:

Restoration of the traffic signal work area shall be included in the related pay items such as foundation, conduit, handhole, trench and backfill, etc. All roadway surfaces such as shoulders, medians, sidewalks, pavement, etc. shall be replaced in kind. All damage to mowed lawns shall be replaced with an approved sod, and all damage to unmowed fields shall be seeded. Restoration of the work area shall be incidental to the contract without any extra compensation allowed to the Contractor.

SUBMITTALS.

Revise Section 802.04 of the Standard Specifications to read:

The Contractor shall provide:

a. All material approval requests shall be submitted a minimum of seven (7) days prior to the delivery of equipment to the job site, or within 30 consecutive calendar days after the contract is awarded, or within 15 consecutive calendar days after the preconstruction meeting, whichever is first.
b. Seven (7) copies of a letter from the Traffic Signal Contractor listing the manufacturer's name and model numbers of the proposed equipment and stating that the proposed equipment meets all contract requirements. The letter will be reviewed by the Traffic Design Engineer to determine whether the equipment to be used is approvable. The letters will be stamped as approved or not approved accordingly and returned to the Contractor.
c. One (1) copy of material catalog cuts.
d. Seven (7) copies of mast arm poles and assemblies.
e. The contract number or permit number, project location/limits and corresponding pay code number must be on each sheet of the letter, material catalog cuts and mast arm poles and assemblies drawings as required in items b, c and d.
f. Exceptions, Deviations and Substitutions. In general, exceptions to and deviations from the requirements of the Contract Documents will not be allowed. It is the Contractor's responsibility to note any deviations from Contract requirements at the time of submittal and to make any requests for deviations in writing to the Engineer. In general, substitutions will not be acceptable. Requests for substitutions must demonstrate that the proposed substitution is superior to the material or equipment required by the Contract Documents. No exceptions, deviations or substitutions will be permitted without the approval of the Engineer.

MAINTENANCE AND RESPONSIBILITY.

Revise Section 802.07 of the Standard Specifications to read:

a) Existing traffic signal installations and/or any electrical facilities at all or various locations may be altered or reconstructed totally or partially as part of the work on this Contract. The Contractor is hereby advised that all traffic control equipment, presently installed at

these locations, may be the property of the State of Illinois, Department of Transportation, Division of Highways, County, Private Developer, or the Municipality in which they are located. Once the Contractor has begun any work on any portion of the project all traffic signals within the limits of this contract or those which have the item "Maintenance of Existing Traffic Signal Installation", "Temporary Traffic Signal Installation(s)" and/or "Maintenance of Existing Flashing Beacon Installation", shall become the full responsibility of the Contractor. The Contractor shall supply the engineer and the Department's Electrical Maintenance Contractor a 24-hour emergency contact name and telephone number.

b) When the project has a pay item for "Maintenance of Existing Traffic Signal Installation", "Temporary Traffic Signal Installation(s)" and/or "Maintenance of Existing Flashing Beacon Installation", the Contractor must notify both the Area Traffic Signal Maintenance and Operations Engineer at (847) 705-4139 and the Department's Electrical Maintenance Contractor, of their intent to begin any physical construction work on the Contract or any portion thereof. This notification must be made a minimum of seven (7) working days prior to the start of construction to allow sufficient time for inspection of the existing traffic signal installation(s) and transfer of maintenance to the Contractor. If work is started prior to an inspection, maintenance of the traffic signal installation(s) will be transferred to the Contractor without an inspection. The Contractor will become responsible for repairing or replacing all equipment that is not operating properly or is damaged at no cost to the owner of the traffic signal. Final repairs or replacement of damaged equipment must meet the approval of the Engineer prior to or at the time of final inspection otherwise the traffic signal installation will not be accepted.

c) Contracts such as pavement grinding or patching which result in the destruction of traffic signal loops do not require maintenance transfer, but require a notification of intent to work and an inspection. A minimum of seven (7) working days prior to the loop removal, the Contractor shall notify the Area Traffic Signal Maintenance and Operations Engineer at (847) 705-4139 and the Department's Electrical Maintenance Contractor, at which time arrangements will be made to adjust the traffic controller timing to compensate for the absence of detection. See additional requirements in these specifications under Inductive Loop Detector.

d) The Contractor is advised that the existing and/or temporary traffic signal installation must remain in operation during all construction stages, except for the most essential down time. Any shutdown of the traffic signal installation, which exceeds fifteen (15) minutes, must have prior approval of the Engineer. Approval to shutdown the traffic signal installation will only be granted during the period extending from 10:00 a.m. to 3:00 p.m. on weekdays. Shutdowns shall not be allowed during inclement weather or holiday periods.

e) The Contractor shall be fully responsible for the safe and efficient operation of the traffic signals. Any inquiry, complaint or request by the Department, the Department's Electrical Maintenance Contractor or the public, shall be investigated and repairs begun within one hour. Failure to provide this service will result in liquidated damages of $500 per day per occurrence. In addition, the Department reserves the right to assign any work not completed within this timeframe to the Electrical Maintenance Contractor. All costs associated to repair this uncompleted work shall be the responsibility of the Contractor. Failure to pay these costs to the Electrical Maintenance Contractor within

one month after the incident will result in additional liquidated damages of $500 per month per occurrence. Unpaid bills will be deducted from the cost of the Contract. The District's Electrical Maintenance Contractor may inspect any signalizing device on the Department's highway system at any time without notification.

TRAFFIC SIGNAL INSPECTION (TURN-ON).

Revise Section 802.10 of the Standard Specifications to read:

It is the intent to have all electric work completed and equipment field tested by the vendor prior to the Department's "turn-on" field inspection. If in the event the Engineer determines work is not complete and the inspection will require more than two (2) hours to complete, the inspection shall be canceled and the Contractor will be required to reschedule at another date. The maintenance of the traffic signals will not be accepted until all punch list work is corrected and re-inspected.

When the road is open to traffic, except as otherwise provided in Section 850 of the Standard Specifications, the Contractor may request a turn-on and inspection of the completed traffic signal installation at each separate location. This request must be made to the Area Traffic Signal Maintenance and Operations Engineer at (847) 705-4139 a minimum of seven (7) working days prior to the time of the requested inspection. The Department will not grant a field inspection until notification is provided from the Contractor that the equipment has been field tested and the intersection is operating according to Contract requirements. The Department's facsimile number is (847) 705-4089.

The Contractor must have all traffic signal work completed and the electrical service installation connected by the utility company prior to requesting an inspection and turn-on of the traffic signal installation. The Contractor shall be responsible to provide a police officer to direct traffic at the time of testing.

The Contractor shall provide a representative from the control equipment vendor's office to attend the traffic signal inspection for both permanent and temporary traffic signal turn-ons. Upon demonstration that the signals are operating and all work is completed in accordance with the Contract and to the satisfaction of the Engineer, the Engineer will then allow the signals to be placed in continuous operation. The Agency that is responsible for the maintenance of each traffic signal installation will assume the maintenance upon successful completion of this inspection.

The District requires the following from the Contractor at traffic signal turn-ons.

1. One set of signal plans of record with field revisions marked in red ink.
2. Notification from the Contractor and the equipment vendor of satisfactory field testing.
3. A knowledgeable representative of the controller equipment supplier shall be required at the traffic signal turn-on. The representative shall be knowledgeable of the cabinet design and controller functions.
4. A copy of the approved material letter.
5. One (1) copy of the operation and service manuals of the signal controller and associated control equipment.
6. Five (5) copies (280 mm X 430 mm) 11" x 17" of the cabinet wiring diagrams.

7. The controller manufacturer shall provide a printer at the turn-on to supply a printed form, not to exceed (280 mm X 430 mm) 11" x 17" for recording the traffic signal controller's timings; backup timings; coordination splits, offsets, and cycles; TBC Time of Day, Week and Year Programs; Traffic Responsive Program, Detector Phase Assignment, Type and Detector Switching; and any other functions programmable from the keyboard. The form shall include a location, date, manufacturer's name, controller model and software version. The form shall be approved by the Engineer and a minimum of three (3) copies must be furnished at each turn-on. The manufacturer must provide all programming information used within the controller at the time of turn-on.

Acceptance of the traffic signal equipment by the Department shall be based upon inspection results at the traffic signal "turn on." If approved, traffic signal acceptance shall be verbal at the "turn on" inspection followed by written correspondence from the Engineer. The Contractor shall be responsible for all traffic signal equipment and associated maintenance thereof until Departmental acceptance is granted.

All equipment and/or parts to keep the traffic signal installation operating shall be furnished by the Contractor. No spare traffic signal equipment is available from the Department.

All punch list work shall be completed within two (2) weeks after the final inspection. The Contractor shall notify the Electrical Maintenance Contractor to inspect all punch list work. Failure to meet these time constraints shall result in liquidated damage charges of $500 per month per incident.

All cost of work and materials required to comply with the above requirements shall be included in the pay item bid prices, under which the subject materials and signal equipment are paid, and no additional compensation will be allowed. Materials and signal equipment not complying with the above requirements shall be subject to removal and disposal at the Contractor's expense.

LOCATING UNDERGROUND FACILITIES.

Revise Section 803.00 to the Standard Specifications to read:

If this Contract requires the services of an Electrical Contractor, the Contractor shall be responsible at his/her own expense for locating existing IDOT electrical facilities prior to performing any work. If this Contract does not require the services of an Electrical Contractor, the Contractor may request one free locate for existing IDOT electrical facilities from the District 1 Electrical Maintenance Contractor prior to the start of any work. Additional requests may be at the expense of the Contractor. The location of underground traffic facilities does not relieve the Contractor of their responsibility to repair any facilities damaged during construction at their expense.

The exact location of all utilities shall be field verified by the Contractor before the installation of any components of the traffic signal system. For locations of utilities the local Counties or Municipalities may need to be contacted, in the City of Chicago contact D.I.G.G.E.R. at (312) 744-7000 and for all other locations contact J.U.L.I.E. at 1-800-892-0123.

ELECTRIC SERVICE INSTALLATION.

Revise Section 805.00 of the Standard Specifications to read:

Description. This work shall consist of all materials and labor required to install, modify, or extend the electric service installation. All installations shall meet the requirements of the details in the "District 1 Standard Traffic Signal Design Details" and applicable portions of the Specifications.

Materials.

a. General. The completed control panel shall be constructed in accordance with UL Std. 508, Industrial Control Panel, and carry the UL label. Wire terminations shall be UL listed.

b. Enclosures.
   1. Pole Mounted Cabinet. The cabinet shall be UL 50, NEMA Type 4X, unfinished single door design, fabricated from minimum 2.03 mm (0.080-inch) thick Type 5052 H-32 aluminum. Seams shall be continuous welded and ground smooth. Stainless steel screws and clamps shall secure the cover and assure a watertight seal. The cover shall be removable by pulling the continuous stainless steel hinge pin. The cabinet shall have an oil-resistant gasket and a lock kit shall be provided with an internal O-ring in the locking mechanism assuring a watertight and dust-tight seal. The cabinet shall be sized to adequately house all required components with extra space for arrangement and termination of wiring. A minimum size of 350 mm (14-inches) high, 225 mm (9-inches) wide and 200 mm (8-inches) in depth is required. The cabinet shall be channel mounted to a wooden utility pole using assemblies recommended by the manufacturer.

   2. Ground Mounted Cabinet. The cabinet shall be UL 50, NEMA Type 3R unfinished single door design with back panel. The cabinet shall be fabricated from Type 5052 H-32 aluminum with the frame and door 3.175 mm (0.125-inch) thick, the top 6.350 mm (0.250-inch) thick and the bottom 12.70 mm (0.500-inch) thick. Seams shall be continuous welded and ground smooth. The door and door opening shall be double flanged. The door shall be approximately 80% of the front surface, with a full length tamperproof stainless steel 1.91 mm (.075-inch) thick hinge bolted to the cabinet with stainless steel carriage bolts and nylocks nuts. The locking mechanism shall be slam-latch type with a keyhole cover. The cabinet shall be sized to adequately house all required components with extra space for arrangement and termination of wiring. A minimum size of 1000 mm (40-inches high), 400 mm (16-inches) wide and 375 mm (15-inches) in depth is required. The cabinet shall be mounted upon a square Type A concrete foundation as indicated on the plans. The foundation is paid for separately.

c. Surge Protector. Overvoltage protection, with LED indicator, shall be provided for the 120 volt load circuit by the means MOV and thermal fusing technology. The response time shall be <5n seconds and operate within a range of –40C to +85C. The surge protector shall be UL 1449 Listed.

d. Circuit Breakers. Circuit breakers shall be standard UL listed molded case, thermal-magnetic bolt-on type circuit breakers with trip free indicating handles. 120 volt circuit breakers shall have an interrupting rating of not less than 65,000 rms symmetrical amperes. Unless otherwise indicated, the main disconnect circuit breaker for the traffic signal controller shall be rated 60 amperes, otherwise noted on the plans, 120 V and the auxiliary circuit breakers shall be rated 10 amperes, 120 V.

e. Fuses, Fuseholders and Power Indicating Light. Fuses shall be small-dimensional cylindrical fuses of the dual element time-delay type. The fuses shall be rated for 600 V AC and shall have a UL listed interrupting rating of not less than 10,000 rms symmetrical amperes at rated voltage. The power indicating light shall be LED type with a green colored lens and shall be energized when electric utility power is present.

f. Ground and Neutral Bus Bars. A single copper ground and neutral bus bar, mounted on the equipment panel shall be provided. Ground and neutral conductors shall be separated on the bus bar. Compression lugs, plus 2 spare lugs, shall be sized to accommodate the cables with the heads of the connector screws painted green for ground connections and white for neutral connections.

g. Utility Services Connection. The Contractor shall notify the Utility Company marketing representative a minimum of 30 working days prior to the anticipated date of hook-up. This 30 day advance notification will begin only after the Utility Company marketing representative has received service charge payments from the Contractor. Prior to contacting the Utility Company marketing representative for service connection, the service installation controller cabinet and cable must be installed for inspection by the Utility Company.

h. Ground Rod. Ground rods shall be copper-clad steel, a minimum of 3.0 meters (10') in length, and 20mm (3/4") in diameter. Ground rod resistance measurements to ground shall be 25 ohms or less. If necessary additional rods shall be installed to meet resistance requirements at no additional cost to the contract.

Installation

a. General. The Contractor shall confirm the orientation of the traffic service installation and its door side with the engineer, prior to installation. All conduit entrances into the service installation shall be sealed with a pliable waterproof material.

b. Pole Mounted. Brackets designed for pole mounting shall be used. All mounting hardware shall be stainless steel. Mounting height shall be as noted on the plans or as directed by the Engineer.

c. Ground Mounted. The service installation shall be mounted plumb and level on the foundation and fastened to the anchor bolts with hot-dipped galvanized or stainless steel nuts and washers. The space between the bottom of the enclosure and the top of the foundation shall be caulked at the base with silicone.

Basis of Payment. The service installation shall be paid for at the contract unit price each for SERVICE INSTALLATION of the type specified which shall be payment in full for furnishing and

installing the service installation complete. The type A foundation which includes the ground rod shall be paid for separately. SERVICE INSTALLATION, POLE MOUNTED shall include the 20mm (3/4") grounding conduit, ground rod, and pole mount assembly. Any changes by the utility companies shall be approved by the engineer and paid for as an addition to the contract according to Article 109.05 of the Standard Specifications.

GROUNDING OF TRAFFIC SIGNAL SYSTEMS.

Revise Section 807.00 of the Standard Specifications to read:

General. All traffic signal systems, equipment and appurtenances shall be properly grounded in strict conformance with the NEC. See IDOT District 1 Traffic Signal detail plan sheet for additional information.

The grounding electrode system shall include a ground rod installed with each traffic signal controller concrete foundation and all mast arm and post concrete foundations. An additional ground rod will be required at locations were measured resistance exceeds 25 ohms. Ground rods are included in the applicable foundation paid item and will not be paid for separately.

Testing shall be according to Section 801.11.

a) The grounded conductor (neutral conductor) shall be white color coded. This conductor shall be bonded to the equipment grounding conductor only at the Electric Service Installation. All power cables shall include one neutral conductor of the same size.

b) The equipment grounding conductor shall be green color coded. The following is in addition to Section 801.14 of the Standard Specifications.

    1) Equipment grounding conductors shall be XLP insulated No. 6, unless otherwise noted on the plans, and bonded to the grounded conductor (neutral conductor) only at the Electric Service Installation. The equipment grounding conductor is paid for separately and shall be continuous. The Earth shall not be used as the equipment grounding conductor.

    2) Equipment grounding conductors shall be bonded, using a Listed grounding connector, to all traffic signal mast arm poles, traffic signal posts, pedestrian posts, pull boxes, handhole frames and covers and other metallic enclosures throughout the traffic signal wiring system, except where noted herein. A Listed electrical joint compound shall be applied to all conductors terminations, connector threads and contact points.

    3) All metallic and non-metallic raceways containing traffic signal circuit runs shall have a continuous equipment grounding conductor, except raceways containing only detector loop lead-in circuits, circuits under 50 volts and/or fiber optic cable will not be required to include an equipment grounding conductor.

c) The grounding electrode conductor shall be similar to the equipment grounding conductor in color coding (green) and size. The grounding electrode conductor is used to connect the ground rod to the equipment grounding conductor and is bonded to ground rods via exothermic welding, listed pressure connectors, listed clamps or other approved listed means.

HANDHOLES.

Add the following to Section 814.00 of the Standard Specifications:

All handholes shall be concrete, poured in place, with inside dimensions of 549 mm (21-1/2") minimum. Frames and lid openings shall match this dimension. The cover of the handhole frame shall be labeled "Traffic Signals" with legible raised letters.

For grounding purposes the handhole frame shall have provisions for a 15.875 mm (7/16") diameter stainless bolt cast into the frame. The covers shall have a stainless steel threaded stint extended from the eye hook assembly for the purpose of attaching the grounding conductor to the handhole cover.

The minimum wall thickness for heavy duty hand holes shall be 300 mm (12 inches).

All conduits shall enter the handhole at a depth of (760 mm) 30" except for the conduits for detector loops when the handhole is less than (1.52 m) 5' from the detector loop.

Steel cable hooks shall be coated with hot-dipped galvanization in accordance with AASHTO Specification M111. Hooks shall be a minimum of 9.525 mm (3/8") diameter and extend into the handhole at least 150 mm (6 inches). Hooks shall be placed a minimum of 300 mm (12 inches) below the lid or lower if additional space is required.

FIBER OPTIC TRACER CABLE.

The cable shall meet the requirements of Section 817 of the "Standard Specifications," except for the following:

Add to Section 817.03 of the Standard Specifications:

In order to trace the fiber optic cable after installation, the tracer cable shall be installed in the same conduit as the fiber optic cable. The tracer cable shall be continuous, extended into the controller cabinet and terminated on a barrier type terminal strip mounted on the side wall of the controller cabinet. The barrier type terminal strip and tracer cable shall be clearly marked and identified. The tracer cable will be allowed to be spliced at the handholes only. All tracer cable splices shall be kept to a minimum and shall incorporate maximum lengths of cable supplied by the manufacturer. The tracer cable splice shall use a Western Union Splice soldered with resin core flux. All exposed surfaces of the solder shall be smooth. Splices shall be soldered using a soldering iron. Blow torches or other devices which oxidize copper cable shall not be allowed for soldering operations. The splice shall be covered with WCSMW 30/100 heat shrink tube, minimum length (100 mm) 4" and with a minimum (25 mm) 1" coverage over the XLP insulation, underwater grade.

Revise Section 817.05 of the Standard Specifications to read:

Basis of Payment: The tracer cable shall be paid for separately as ELECTRIC CABLE IN CONDUIT, TRACER, NO. 14 1C per (meter) foot, which price shall include all associated labor and material for installation.

GROUNDING CABLE.

The cable shall meet the requirements of Section 817 of the "Standard Specifications," except for the following:

Add to Section 817.02 (b) of the Standard Specifications:

Unless otherwise noted on the Plans, traffic signal grounding conductor shall be one conductor, #6 gauge copper, with a XLP jacket.

The traffic signal grounding conductor shall be bonded, using a Listed grounding connector (Burndy type KC/K2C, as applicable, or approved equal), to all proposed and existing traffic signal mast arm poles and traffic/pedestrian signal posts, including push button posts. The grounding conductor shall be bonded to all proposed and existing pull boxes, handhole frames and covers and other metallic enclosures throughout the traffic signal wiring system and noted herein and detailed on the plans. Bonding to existing handhole frames and covers shall be paid for separately.

Revise Section 817.05 of the Standard Specifications to read:

Basis of Payment. Grounding cable shall be measured in place for payment in (meter) foot. Payment shall be at the contract unit price for ELECTRIC CABLE IN CONDUIT, GROUNDING, NO. 6, 1C, which price includes all associated labor and material including grounding clamps, splicing, exothermic welds/other Listed connectors and hardware.

RAILROAD INTERCONNECT CABLE.

The cable shall meet the requirements of Section 817 of the "Standard Specifications," except for the following:

Add to Section 817.02 of the Standard Specifications:

The cable shall be three conductor standard #14 copper cable in a clear polyester binder, shielded with #36 AWG tinned copper braid with 85% coverage, and insulated with .016" polyethylene (black, blue, red). The jacket shall be black 0.045 PVC or polyethylene.

Revise Section 817.05 of the Standard Specifications to read:

Basis of Payment. This work shall be paid for at the contract unit price per (meter) foot for ELECTRIC CABLE IN CONDUIT, RAILROAD, NO. 14 3C, which price shall be payment in full for furnishing, installing, and making all electrical connections in the traffic signal controller cabinet. Connections in the railroad controller cabinet shall be performed by railroad personnel.

MAINTENANCE OF EXISTING TRAFFIC SIGNAL INSTALLATION.

Revise Section 850.00 of the Standard Specifications to read:

The energy charges for the operation of the traffic signal installation shall be paid for by others. Full maintenance responsibility shall start as soon as the Contractor begins any physical work on the Contract or any portion thereof.

The Contractor shall have on staff electricians with IMSA Level II certification to provide signal maintenance.

This item shall include maintenance of all traffic signal equipment at the intersection, including emergency vehicle pre-emption equipment, master controllers, telephone service installations, communication cables and conduits to adjacent intersections.

The maintenance shall be according to District 1 revised Article 802.07 and the following contained herein.

The Contractor shall check all controllers every two (2) weeks, which will include visually inspecting all timing intervals, relays, detectors, and pre-emption equipment to ensure that they are functioning properly. This item includes, as routine maintenance, all portions of emergency vehicle pre-emption equipment. The Contractor shall maintain in stock at all times a sufficient amount of materials and equipment to provide effective temporary and permanent repairs.

The Contractor shall provide immediate corrective action when any part or parts of the system fail to function properly. Two far side heads facing each approach shall be considered the minimum acceptable signal operation pending permanent repairs. When repairs at a signalized intersection require that the controller be disconnected, and power is available, the Contractor shall place the traffic signal installation on flashing operation. The signals shall flash RED for all directions unless a different indication has been specified by the Engineer. The Contractor shall be required to place stop signs (R1-1-36) at each approach of the intersection as a temporary means of regulating traffic. At approaches where a yellow flashing indication is necessary, as directed by the Engineer, stop signs will not be required. The Contractor shall furnish and equip all their vehicles assigned to the maintenance of traffic signal installations with a sufficient number of stop signs as specified herein. The Contractor shall maintain a sufficient number of spare stop signs in stock at all times to replace stop signs which may be damaged or stolen.

The Contractor shall provide the Engineer with a 24 hour telephone number for the maintenance of the traffic signal installation and for emergency calls by the Engineer.

Traffic signal equipment which is lost or not returned to the Department for any reason shall be replaced with new equipment meeting the requirements of these Specifications.

The Contractor shall respond to all emergency calls from the Department or others within one hour after notification and provide immediate corrective action. When equipment has been damaged or becomes faulty beyond repair, the Contractor shall replace it with new and identical equipment. The cost of furnishing and installing the replaced equipment shall be borne by the Contractor at no additional charge to the State. The Contractor may institute action to recover damages from a responsible third party. If at any time the Contractor fails to perform all work as specified herein to keep the traffic signal installation in proper operating condition or if the Engineer cannot contact the Contractor's designated personnel, the Engineer shall have the State's Electrical Maintenance Contractor perform the maintenance work required. The State's

Electrical Maintenance Contractor shall bill the Contractor for the total cost of the work. The Contractor shall pay this bill within thirty (30) days of the date of receipt of the invoice or the cost of such work will be deducted from the amount due the Contractor. The Contractor shall allow the Electrical Maintenance Contractor to make reviews of the Existing Traffic Signal Installation

that has been transferred to the Contractor for Maintenance.

Basis of Payment. This work shall be paid for at the contract unit price each for MAINTENANCE OF EXISTING TRAFFIC SIGNAL INSTALLATION.

TRAFFIC ACTUATED CONTROLLER.

Add the following to Section 857.00 of the Standard Specifications:

Controllers shall be NEMA TS2 Type 1, Econolite ASC/2S-1000 or Eagle M41 unless specified otherwise on the plans or elsewhere on these specifications. Only controllers supplied by one of the District 1 approved closed loop equipment manufacturers will be allowed. The controller shall be the most recent model and software version supplied by the manufacturer at the time of the approval. The traffic signal controller shall provide features to inhibit simultaneous display of a circular yellow ball and a yellow arrow display. Individual load switches shall be provided for each vehicle, pedestrian, and right turn over lap phase.

By December 31, 2002, the controller shall provide a background timer which will prevent phases from being skipped during program changes.

MASTER CONTROLLER.

Revise Sections 860.02 - Materials and 860.03 - Installation of the Standard Specifications to read:

Only controllers supplied by one of the District approved closed loop equipment manufacturers will be allowed. Only NEMA TS 2 Type 1 Eagle and Econolite closed loop systems shall be supplied. The latest model and software version of master controller shall be supplied.

Functional requirements in addition to those in section 863 of the Standard Specification include:

The system commands shall consist of, as a minimum, six (6) cycle lengths, five (5) offsets, three (3) splits, and four (4) special functions. The system commands shall also include commands for free or coordinated operation.

Traffic Responsive operation shall consist of the real time acquisition of system detector data, data validation, and the scaling of acquired volumes and occupancies in a deterministic fashion so as to cause the selection and implementation of the most suitable traffic plan.

Full duplex communication between the master and its local controllers is recommended, but at this time not required. The data rate shall be 1200 baud minimum.

The cabinet shall be provided with a Siecor CAC 3000, or equivalent, Outdoor Network Interface for termination of the telephone service. It shall be mounted to the inside of the cabinet in a location suitable to provide access for termination of the telephone service at a later date. The CAC 3000 shall be equipped with a standard Three-Electrode Heavy Duty Gas Tube Surge Arrestor.

The cabinet shall provide a caller identification unit with 50 number memory.

The cabinet shall be equipped with a 9600 baud, auto dial/auto answer, modem. It shall be a US robotics 33.6K baud rate or equal.

Each master shall be delivered with up to three (3) complete sets of the latest edition of registered remote monitoring software with full manufacture's support. Each set shall consist of software on suitable media (CD, 3 1/2" or 5 1/4" floppy disks as requested by the Engineer), and a bound set of manuals containing loading and operating instruction. One copy of the software and support data shall be delivered to the Agency in charge of system operation, if other than IDOT. One of these two sets will be provided to the Agency Signal Maintenance Contractor for his use in monitoring the system.

The Contractor shall be required to setup graphic displays and all software parameters for every intersection to be interconnected under this Contract, including complete viewing and control capabilities from IDOT remote monitor.

The approved manufacturer of equipment shall loan the District one master controller and two intersection controllers of the most recent models and the newest software version to be used for instructional purposes in addition to the equipment to be supplied for the Contract.

The Contractor shall arrange to install a standard voice-grade dial-up telephone line to the master controller. This shall be accomplished through the following process utilizing District 1 staff.

As soon as practical or within one week after the contract has been awarded, the Contractor shall contact (via phone) the Administrative Support Manager in the District 1 Business Services Section at (847) 705-4011 to request a phone line installation.

A follow-up fax transmittal to the Administrative Support Manager (847-705-4712) with all required information pertaining to the phone installation is required from the Contractor as soon as possible or within one week after the initial request has been made. A copy of this fax transmittal must also be faxed by the Contractor to the Traffic Signal Systems Engineer at (847) 705-4089. The required information to be supplied on the fax shall include (but not limited to): A street address for the new traffic signal controller (or nearby address); a nearby existing telephone number; what type of telephone service is needed; the name and number of the Contractor's employee for the telephone company to contact regarding site work and questions.

The usual time frame for the activation of the phone line is 4-6 weeks after the Business Services Section has received the Contractor supplied fax. It is, therefore, imperative that the phone line conduit and pull-string be installed by the Contractor in anticipation of this time frame. On jobs which include roadway widening in which the conduit cannot be installed until this widening is completed, the Contractor will be allowed to delay the phone line installation request to the Business Services Section until a point in time that is 4-6 weeks prior to the anticipated completion of the traffic signal work. The contractor shall provide the Administrative Support Manager with an expected installation date considering the 4-6 week processing time.

The telephone line shall be installed and activated one month before the system final inspection.

All costs associated with the telephone line installation and activation (not including the Contract specified conduit installation between the point of telephone service and the traffic signal

controller cabinet) shall be paid for by the District One Business Services Section (i.e., this will be an IDOT phone number not a Contractor phone number).

FIBER OPTIC CABLE.

Revise Section 871.00 of the Standard Specifications to read:

This work shall consist of furnishing and installing Fiber Optical cable in conduit with all accessories and connectors according to Section 871 of the Standard Specifications. The cable shall be of the type, size, and the number of fiber specified.

The control cabinet distribution enclosure shall be 3M Model 8173 or an approved equivalent. The fiber optic cable shall provide six fibers per tube for the amount of fibers called for in the Fiber Optic Cable pay item in the Contract. A minimum of six multimode fibers from each cable shall be terminated with approved mechanical connectors at the distribution enclosure. Fibers not being used shall be labeled "spare." Fibers not attached to the distribution enclosure shall be capped and sealed. A minimum of (4m) 13.0' of slack cable shall be provided for the controller cabinet. The controller cabinet slack cable shall be stored as directed by the Engineer.

Fiber Optic cable may be gel filled or an approved water blocking tape.

Basis of Payment. The work shall be paid for at the contract unit price for FIBER OPTIC CABLE IN CONDUIT, NO. 62.5/125, MM12F SM12F, per (meter) foot for the cable in place, including distribution enclosure and all connectors.

CONCRETE FOUNDATIONS.

Add the following to Section 878.03 of the Standard Specifications:

All anchor bolts shall be according to Section 1006.09, except all anchor bolts shall be hot dipped galvanized the full length of the anchor bolt including the hook.

Concrete Foundations, Type "A" for Traffic Signal Posts shall provide anchor bolts with the bolt pattern specified within the "District 1 Standard Traffic Signal Design Details." All Type "A" foundations shall be a minimum depth of 1.22 m (48").

Concrete Foundations, Type "D" for Traffic Signal Cabinets shall be a minimum of 1.22 m (48") long and 790 mm (31") wide. All Type "D" foundations shall be a minimum depth of 1.22 m (48"). The concrete apron shall be 910 mm X 1220 mm X 130 mm (36"x48"x5"). Anchor bolts shall provide bolt spacing as required by the manufacturer.

Concrete Foundations, Type "E" for Mast Arm and Combination Mast Arm Poles shall meet the following requirements:

DESIGN TABLE FOR 750 mm (30-INCH) DIAMETER FOUNDATION
FOR ALL MAST ARMS 4.26M (14 FEET) TO 16.76M (55 FEET)
AND ALL COMBINATION POLES (DESIGN DEPTH IS 4.57 m [15 FEET])

	TYPE OF SOIL DESCRIPTION	DESIGN DEPTH OF FOUNDATION		TYPE OF SOIL DESCRIPTION	DESIGN DEPTH OF FOUNDATION
1.	SOFT CLAY	5.33 m(17' – 6")	*4.	LOOSE SAND	3.05 m(10' – 0")
2.	MEDIUM CLAY	3.81 m(12' – 6")	*5.	MEDIUM SAND	2.74 m(9' – 0")
3.	STIFF CLAY	2.59 m(8' – 6")	*6.	DENSE SAND	2.44 m(8' – 0")

* WATER TABLE ASSUMED BELOW DEPTHS SPECIFIED

No foundation is to be poured until the Resident Engineer gives his/her approval as to the depth of the foundation. Foundations used for Roadway Lighting shall provide an extra 65 mm (2-1/2 inch) duct.

DETECTOR LOOP.

Revise Section 886 of the Standard Specifications to read:

A minimum of seven (7) working days prior to the Contractor cutting loops, the Contractor shall have the proposed loop locations marked and contact the Area Traffic Signal Maintenance and Operations Engineer (847) 705-4139 to inspect and approve the layout. When preformed detector loops are installed, the Contractor shall have them inspected and approved prior to the pouring of the portland cement concrete surface, using the same notification process as above.

Loop detectors shall be installed according to the requirements of the "District 1 Standard Traffic Signal Design Details". Saw-cuts (homeruns on preformed detector loops) from the loop to the edge of pavement shall be made perpendicular to the edge of pavement when possible in order to minimize the length of the saw-cut (homerun on preformed detector loops) unless directed otherwise by the Engineer or as shown on the plan.

The detector loop cable insulation shall be labeled with the cable specifications.

Each loop detector lead-in wire shall be labeled in the handhole using a Panduit 250W175C water proof tag, or an approved equal, secured to each wire with nylon ties.

Resistance to ground shall be a minimum of 100 mega-ohms under any conditions of weather or moisture. Inductance shall be more than 50 and less than 700 microhenries. Quality readings shall be more than 5.

(a) Type I. All loops installed in new asphalt pavement shall be installed in the binder course and not in the surface course. The edge of pavement, curb and handhole shall be cut with a 6.3 mm (1/4") deep x 100 mm (4") saw cut to mark location of each loop lead-in.

Loop sealant shall be a two-component thixotropic chemically cured polyurethane either Chemque Q-Seal 295, Percol Elastic Cement A/C Grade or an approved equal. The sealant shall be installed 3 mm (1/8") below the pavement surface, if installed above the surface the overlap shall be removed immediately.

Detector loop measurements shall include the saw cut and the length of the loop lead-in to the edge of pavement. The lead-in wire, including all necessary connections for

proper operations, from the edge of pavement to the handhole, shall be incidental to the price of the detector loop. Unit duct, trench and backfill, and drilling of pavement or handholes shall be incidental to detector loop quantities.

(b) Preformed. This work shall consist of furnishing and installing a rubberized heat resistant preformed traffic signal loop in accordance with the Standard Specifications, except for the following:

Preformed detector loops shall be installed in new pavement constructed of portland cement concrete using mounting chairs or tied to re-bar or the preformed detector loops may be placed in the sub-base. Loop lead-ins shall be protected to the satisfaction of the Engineer.

Handholes shall be placed next to the shoulder or back of curb when preformed detector loops enter the handhole.

Preformed detector loops shall be factory assembled. Homeruns and interconnects shall be pre-wired and shall be an integral part of the loop assembly. The loop configurations and homerun lengths shall be assembled for the specific application. The loop and homerun shall be constructed using 17.2 mm (11/16") outside diameter (minimum), 9.5 mm (3/8") inside diameter (minimum) Class A oil resistant synthetic cord reinforced hydraulic hose with 1,720 kPa (250 psi) internal pressure rating. Hose for the loop and homerun assembly shall be one continuous piece. No joints or splices shall be allowed in the hose except where necessary to connect homeruns or interconnects to the loops. This will provide maximum wire protection and loop system strength. Hose tee connections shall be heavy duty high temperature synthetic rubber. The tee shall be of proper size to attach directly to the hose, minimizing glue joints. The tee shall have the same flexible properties as the hose to insure that the whole assembly can conform to pavement movement and shifting without cracking or breaking. The wire used shall be #16 THWN stranded copper. The number of turns in the loop shall be application specific. Homerun wire pairs shall be twisted a minimum of four turns per foot. No wire splices will be allowed in the preformed loop assembly. The loop and homeruns shall be filled and sealed with a flexible sealant to insure complete moisture blockage and further protect the wire.

Basis of Payment. This work shall be paid for at the contract unit price per meter (foot) for DETECTOR LOOP, TYPE I or PREFORMED DETECTOR LOOP as specified in the plans, which price shall be payment in full for furnishing and installing the detector loop and all related connections for proper operation.

EMERGENCY VEHICLE PRIORITY SYSTEM.

Revise Section 887.00 of the Standard Specifications to read:

It shall be the Contractor's responsibility to contact the municipality or fire district to verify the brand of emergency vehicle pre-emption equipment to be installed prior to the contract bidding. The equipment must be completely compatible with all components of the equipment currently in use by the Agency.

All new installations shall be equipped with Confirmation Beacons as shown on the "District 1 Standard Traffic Signal Design Details." The Confirmation Beacon shall consist of a 150 watt Par 38 flood lamp for each direction of pre-emption. The lamp shall have an adjustable mount with a weatherproof enclosure for cable splicing. All hardware shall be cast aluminum or stainless steel. Holes drilled into signal poles, mast arms, or posts shall require rubber grommets. In order to maintain uniformity between communities, the confirmation beacons shall indicate when the control equipment receives the pre-emption signal. The pre-emption movement shall be signalized by a flashing indication at the rate specified by Section 4E-5 of the "Manual On Uniform Traffic Control Devices." The stopped pre-empted movements shall be signalized by a continuous indication.

All light operated systems shall operate at a uniform rate of 14.035 Hz ±0.002, or as otherwise required by the Engineer, and provide compatible operation with other light systems currently being operated in the District.

Basis of Payment. The work shall be paid for at the contract unit price each for furnishing and installing LIGHT DETECTOR and LIGHT DETECTOR AMPLIFIER. Furnishing and installing the confirmation beacon shall be incidental to the cost of the Light Detector. The preemption detector amplifier shall be paid for on a basis of (1) one each per intersection controller and shall provide operation for all movements required in the pre-emption phase sequence.

TEMPORARY TRAFFIC SIGNAL INSTALLATION.

Revise Section 890.00 of the Standard Specifications to read:

Only an approved equipment vendor will be allowed to assemble the temporary traffic signal cabinet. Also, an approved equipment vendor shall assemble and test a temporary railroad traffic signal cabinet. (Refer to the "Inspection of Controller and Cabinet" specification). A representative of the approved control equipment vendor shall be present at the temporary traffic signal turn-on inspection.

Only controllers supplied by one of the District approved closed loop equipment manufacturers will be approved for use at temporary signal locations. All controllers used for temporary traffic signals shall be fully actuated NEMA microprocessor based with RS232 data entry ports compatible with existing monitoring software approved by IDOT District 1, installed in NEMA TS1 or TS2 cabinets with 8 phase back panels, capable of supplying 255 seconds of cycle length and individual phase length settings up to 99 seconds. On projects with one lane open and two way traffic flow, such as bridge deck repairs, the temporary signal controller shall be capable of providing an adjustable all red clearance setting of up to 30 seconds in length. All controllers used for temporary traffic signals shall meet or exceed the requirements of Section 857 of the Standard Specifications with regards to internal time base coordination and preemption.

All temporary traffic signal cabinets shall have a closed bottom made of aluminum alloy. The bottom shall be sealed along the entire perimeter of the cabinet base to ensure a water, dust and insect-proof seal. The bottom shall provide a minimum of two (2) 100 mm (4 inch) diameter holes to run the electric cables through. The 100 mm (4 inch) diameter holes shall have a bushing installed to protect the electric cables and shall be sealed after the electric cables are installed.

Grounding shall be provided for the temporary traffic signal cabinet meeting or exceeding the applicable portions of the National Electrical Code, Section 807 of the Standard Specifications and shall meet the requirements of the District 1 Traffic Signal Specifications for "Grounding of Traffic Signal Systems".

All traffic signal sections and pedestrian signal sections shall be 300 mm (12 inches). The temporary traffic signal heads shall be placed as indicated on the temporary traffic signal plan or as directed by the Engineer. The Contractor shall furnish enough cable slack to relocate heads to any position on the span wire or at locations illustrated on the plans for construction staging. The temporary traffic signal shall remain in operation during all signal head relocations. Each temporary traffic signal head shall have its own cable from the controller cabinet to the signal head.

The existing system interconnect is to be maintained as part of the Temporary Traffic Signal Installation specified for on the plan. The interconnect shall be installed into the temporary controller cabinet as per the notes or details on the plans. All labor and equipment required to install and maintain the existing interconnect as part of the Temporary Traffic Signal Installation shall be incidental to the item Temporary Traffic Signal Installation.

All emergency vehicle preemption equipment (light detectors, light detector amplifiers, confirmation beacons, etc.) as shown on the temporary traffic signal plans shall be provided by the Contractor. It shall be the Contractor's responsibility to contact the municipality or fire district to verify the brand of emergency vehicle preemption equipment to be installed prior to the contract bidding. The equipment must be completely compatible with all components of the equipment currently in use by the Agency. All light operated systems shall operate at a uniform rate of 14.035 hz ±0.002, or as otherwise required by the Engineer, and provide compatible operation with other light systems currently being operated in the District. All labor and material required to install and maintain the Emergency Vehicle Preemption installation shall be incidental to the item Temporary Traffic Signal Installation.

All temporary traffic signal installations shall have vehicular detection installed as shown on the plans or as directed by the Engineer. Pedestrian push buttons shall be provided for all pedestrian signal heads/phases as shown on the plans or as directed by the Engineer. Minor cross streets shall have vehicular detection provided by Microwave Vehicle Sensors or Video Vehicle Detection System as shown on the plans or as directed by the Engineer. The microwave vehicle sensor or video vehicle detection system shall be approved by IDOT before furnishing and installing. The Contractor shall install, wire, and adjust the alignment of the microwave vehicle sensor or video vehicle detection system in accordance to the manufacturer's recommendations and requirements. The Contractor shall be responsible for adjusting the alignment of the microwave vehicle sensor or video vehicle detection system for all construction staging changes and for maintaining proper alignment throughout the project. A representative of the approved control equipment vendor shall be present and assist the contractor in setting up and maintaining the microwave vehicle sensor or video vehicle detection system.

All existing street name and intersection regulatory signs shall be removed from existing poles and relocated to the temporary signal span wire. If new mast arm assembly and pole(s) and posts are specified for the permanent signals, the signs shall be relocated to the new equipment at no extra cost.

The energy charges for the operation of the traffic signal installation shall be paid for by others if the installation replaces an existing signal. Otherwise charges shall be paid for under 109.05 of the Standard Specifications.

All control equipment for the temporary traffic signal(s) shall be furnished by the Contractor unless otherwise stated in the plans. On projects with multiple temporary traffic signal installations, all controllers shall be the same manufacturer brand and model number with current software installed.

Maintenance shall meet the requirements of the Traffic Specifications and District Specifications for "Maintenance of Existing Traffic Signal Installation." Maintenance of temporary signals and of the existing signals shall be incidental to the cost of this item. When temporary traffic signals are to be installed at locations where existing signals are presently operating, the Contractor shall be fully responsible for the maintenance of the existing signal installation as soon as he begins any physical work on the Contract or any portion thereof. Maintenance responsibility of the existing signals shall be incidental to the item Temporary Traffic Signal Installation(s). In addition, a minimum of seven (7) days prior to assuming maintenance of the existing traffic signal installation(s) under this Contract, the Contractor shall request that the Resident Engineer contact the Bureau of Traffic (847) 705-4139 for an inspection of the installation(s).

Temporary Traffic Signals for bridge projects shall follow the State Standards, Standard Specifications, District 1 Traffic Signal Specifications and any plans for Bridge Temporary Traffic Signals included in the plans. The installation shall meet the above requirements for "Temporary Traffic Signal Installation". In addition all electric cable shall be aerially suspended, at a minimum height of 5.5m (18 feet), on temporary wood poles (Class 5 or better) of 13.7 m (45 feet), minimum height. The signal heads shall be span wire mounted or bracket mounted to the wood pole or as directed by the Engineer. The Controller cabinet shall be mounted to the wood pole or as directed by the Engineer. Microwave vehicle sensors or video vehicle detection may be used in place of the detector loops as approved by the Engineer.

Basis of Payment: This work shall be paid for at the contract unit price each for TEMPORARY TRAFFIC SIGNAL INSTALLATION. The price of which shall include all costs for the modifications required for traffic staging, changes in signal phasing as required in the Contract plans, microwave vehicle sensors, video vehicle detection system, any maintenance or adjustment to the microwave vehicle sensors/video vehicle detection system, all material required, the installation and complete removal of the temporary traffic signal.

REMOVE EXISTING TRAFFIC SIGNAL EQUIPMENT.

Add the following to Section 895.05 of the Standard Specifications:

The traffic signal equipment which is to be removed and is to become the property of the Contractor shall be disposed of by them outside the right-of-way at their expense.

Contractor shall safely store and arrange for delivery of all equipment to be returned to the Village or others. All equipment shall be delivered within 30 days of its removal. Contractor shall provide 5 copies of a list of equipment that is to remain the property of the Village, including model and serial numbers where applicable. Controllers and peripheral equipment from the same location shall be boxed together (equipment from different locations may not be mixed) and shall be, along with the cabinet, clearly marked or labeled with the location from

which they were removed. The Contractor shall be responsible for the condition of the traffic signal equipment from the time of removal until the acceptance of a receipt drawn by the Village indicating that the items have been returned in good condition.
All equipment to be returned to the Village or others shall be delivered by the Contractor to the Village.

Traffic signal equipment which is lost or not returned to the Department for any reason shall be replaced with new equipment meeting the requirements of these Specifications.

SECTION 1000 MATERIALS

PEDESTRIAN PUSH-BUTTON.

Add the following to Section 1074.02 (b) and (d) of the Standard Specifications to read:

(b) Push-button assemblies shall be constructed of corrosion-proof materials, BumbleBee Pedestrian Buttons or an approved equivalent.
(d) The assembly shall provide ADA push-buttons with one of the following signs: SF-1017, 1018 or 1020 - 5" x 7¾" (127 mm x 197 mm).

CONTROLLER CABINET AND PERIPHERAL EQUIPMENT.

Revise Section 1074.03 of the Standard Specifications to read:

Cabinets shall be designed for NEMA TS2 Type 1 operation. All cabinets shall be pre-wired for a minimum of eight (8) phases of vehicular, four (4) phases of pedestrian and four (4) phases of overlap operation.

- Cabinets – Provide 1/8" (3.2 mm) thick unpainted aluminum alloy 5052-H32. The surface shall be smooth, free of marks and scratches. All external hardware shall be stainless steel.
- Controller Harness – Provide a TS2 Type 2 "A" wired harness in addition to the TS2 Type 1 harness.
- Surge Protection – EDCO Model 1210 IRS with failure indicator.
- BIU – Containment screw required.
- Transfer Relays – Solid state or mechanical flash relays are acceptable.
- Switch Guards – All switches shall be guarded.
- Heating – Four (4) porcelain light receptacles with cage protection mounted high and low each on different sides of the cabinet controlled by both a wall switch and a thermostat.
- Plan & Wiring Diagrams – 12" x 16" (3.05mm x 4.06mm) moisture sealed container attached to door.
- Detector Racks – Fully wired and labeled for four (4) channels of emergency vehicle pre-emption and sixteen channel (16) of vehicular operation.
- Field Wiring Labels – All field wiring shall be labeled.
- Field Wiring Termination – Approved channel lugs required.
- Power Panel – Provide a nonconductive shield.
- Circuit Breaker – The circuit breaker shall be sized for the proposed load but shall not be rated less than 30 amps.

- Police Door – Provide wiring and termination for plug in manual phase advance switch.
- Railroad Pre-Emption Test Switch – Eaton 8830K13 SHA 1250 or equivalent.

TRAFFIC ACTUATED CONTROLLER AND CABINET INTERCONNECTED WITH RAILROADS.

Add the following to Section 1074.03 of the Standard Specifications to read:

Cabinets shall be new and NEMA TS2 Type 1 design. In addition to the aforementioned District One equipment specifications, the following shall apply to railroad interconnected equipment: Railroad interconnected controllers and cabinets shall be assembled only by an approved traffic signal equipment supplier. The equipment shall be tested and approved in the equipment suppliers District One facility prior to field installation.

Pedestrian clearance during railroad pre-emption shall be limited to a flashing don't walk interval in length to the vehicle yellow clearance interval and shall time concurrently with the vehicle yellow clearance.

The controller shall provide for immediate track clearance green re-service upon receipt of each subsequent pre-empt demand. During this re-service all normal vehicle clearance intervals, including red revert, will be respected.

The terminal facility shall be wired so as to provide supervision of all essential pre-emption components. This wiring shall cause the facility to transfer to or remain in flashing operation in the event any critical component is missing, not connected or failed. Interface relays shall be wired so as to be in the energized state during normal (non-pre-empt) operation. Failure of a relay coil shall open the supervision loop and cause the intersection to transfer to flashing operation. Each critical element such as controller harnesses and interface relays shall be wired to form a series loop which must be complete for normal operation.

A method of supervising the 3 conductor cable interconnecting the traffic and railroad facilities shall provide flashing operation during failed cable conditions. Upon detection of a failed railroad interconnect the controller shall provide one (1) track clearance green interval and shall enter flashing operation at end of track clearance yellow interval. Such flashing operation must be manually reset. The supervision circuit shall, within reason, be capable of detecting failure of the supervision circuit components themselves, and shall provide fail-safe operation upon such failure.

The interconnect to railroad facility shall be such that demand for pre-emption begins when the railroad flashers begin to flash and ends when railroad gates begin to rise.

An IDOT approved method of controller security shall be implemented to assure data integrity and to preclude changes to critical data. The method shall include a means for the controller to continuously verify controller/cabinet CRC match. The CRC will be developed based on pre-emptor entries, unit data (including phases in use, sequence and ring structure, etc.), overlap assignment and timing, firmware version, and any special memory content necessary to proper operation. Where data is stored in a data module a spare data module shall be provided to the Engineer.

A test switch shall be provided in the railroad circuit to initiate pre-emption. See cabinet specifications.

ELECTRIC CABLE.

Delete "or stranded, and No. 12 or" from the last sentence of Section 1076.04 (a) of the Standard Specifications.

MAST ARM ASSEMBLY AND POLE.

Add the following to Section 1077.03 (a) of the Standard Specifications:

Traffic signal mast arms shall be one piece construction, unless otherwise approved by the Engineer. All poles shall be galvanized and powder coating by the manufacturer will be required over the galvanization. The mast arms shall be painted Valmont #333, "Dark Bronze" or approved equal.

This work shall consist of furnishing and installing a galvanized steel or extruded aluminum shroud for protection of the mast arm pole base plate similar to the dimensions detailed in the "District 1 Standard Traffic Signal Design Details." The shroud shall be of sufficient strength to deter pedestrian and vehicular damage. The shroud shall allow air to circulate throughout the mast arm but not allow manifestation of insects or critters. The shroud shall be constructed, installed and designed not to be hazardous to probing fingers and feet. All mounting hardware shall be stainless steel. The shroud shall not be paid for separately but shall be included in the cost of the mast arm assembly and pole.

TRAFFIC SIGNAL POST.

Add the following to Section 1077.03 (b) of the Standard Specifications:

All posts and bases shall be steel and hot dipped galvanized and powder coating by the manufacturer will be required over the galvanization. The posts shall be painted Valmont #333, "Dark Bronze" or approved equal.

SIGNAL HEADS.

Add the following to Section 1078 of the Standard Specifications to read:

All signal and pedestrian heads shall provide 12" (300 mm) displays with glossy black polycarbonate housings. All head housings shall be the same color (black) at the intersection. For new signalized intersections and existing signalized intersections where all signal and/or pedestrian heads are being replaced, the proposed head housings shall be black. Where only selected heads are being replaced, the proposed head housing color (black) shall match existing head housings. Connecting hardware and mounting brackets shall be polycarbonate (black) or galvanized. A corrosive resistant anti-seize lubricant shall be applied to all metallic mounting bracket joints, and shall be visible to the inspector at the signal turn-on. Post top mounting collars are required on all posts, and shall be constructed of the same material as the brackets.

Pedestrian signal heads shall be furnished with the international symbolic "Walking Person" and "Upraised Palm" lenses. Egg crate sun shields are not permitted.

Signal heads shall be positioned according to the "District 1 Standard Traffic Signal Design Details."

SIGNAL HEAD, BACKPLATE.

Delete 1st sentence of 1078.03 of the Standard Specifications and add "All backplates shall be aluminum and louvered".

INDUCTIVE LOOP DETECTOR.

Add the following to Section 1079.01 of the Standard Specifications:

Contracts requiring new cabinets shall provide for card mounted detector amplifiers. Loop amplifiers shall provide LCD displays with loop frequency, inductance, and change of inductance readings.

ILLUMINATED SIGN, LIGHT EMITTING DIODE.

Description. This work shall consist of furnishing and installing an illuminated sign with light emitting diodes.

General. The light emitting diode (LED) blank out signs shall be manufactured by National Sign & Signal Company, or an approved equal and consist of a weatherproof housing and door, LEDs and transformers.

Display. The LED blank out sign shall provide the correct symbol and color for "NO LEFT TURN" OR "NO RIGHT TURN" indicated in accordance with the requirements of the "Manual on Uniform Traffic Control Devices". The message shall be formed by rows of LEDs.

The message shall be clearly legible. The message shall be highly visible, anywhere and under any lighting conditions, within a 15 degree cone centered about the optic axis.
The sign face shall be 24 inches (600 mm) by 24 inches (600 mm). The sign face shall be completely illegible when not illuminated. No symbol shall be seen under any ambient light condition when not illuminated.

All LEDs shall be T-1 ¾ (5mm) and have an expected lamplife of 100,000 hours. Operating wavelengths will be Red-626nm, Amber-590nm, and Bluish/Green-505nm. Transformers shall be rated for the line voltage with Class A insulation and weatherproofing. The sign shall be designed for operation over a range of temperatures from –35F to +165 F (-37C to +75C).

The LED module shall include the message plate, high intensity LEDs and LED drive electronics. Door panels shall be flat black and electrical connections shall be made via barrier-type terminal strip. All fasteners and hardware shall be corrosion resistant stainless steel.

Housing. The housing shall be constructed of extruded aluminum. All corners and seams shall be heli-arc welded to provide a weatherproof seal around the entire case. Hinges shall be continuous full-length stainless steel. Signs shall have stainless steel hardware and provide tool free access to the interior of the sign. Doors shall be 0.125-inch thick extruded aluminum with a 3/16-inch x 1-inch neoprene gasket and sun hood. The sign face shall have a polycarbonate, matte clear, lexan face plate. Drainage shall be provided by four drain holes at the corners of the housing. The finish on the sign housing shall include two coats of exterior enamel applied after the surface is acid-etched and primed with zinc-chromate primer.

Mounting hardware shall be black polycarbonate or galvanized steel and similar to mounting Signal Head hardware and brackets specified herein.

Basis of Payment. This work shall be paid for at the unit price each for ILLUMINATED SIGN, L.E.D.

GROUNDING EXISTING HANDHOLE FRAME AND COVER.

Description. This work shall consist of all materials and labor required to bond the equipment grounding conductor to the existing handhole frame and handhole cover. All installations shall meet the requirements of the details in the "District 1 Standard Traffic Signal Design Details" and applicable portions of the Specifications.

The equipment grounding conductor shall be bonded to the handhole frame and to the handhole cover. Two (2) ½-inch diameter x 1 ¼-inch long hex-head stainless steel bolts, spaced 1.75-inches apart center-to-center shall be fully welded to the frame and to the cover to accommodate a heavy duty Listed grounding compression terminal (Burndy type YGHA or approved equal). The grounding compression terminal shall be secured to the bolts with stainless steel split-lock washers and nylon-insert locknuts.

Welding preparation for the stainless steel bolt hex-head to the frame and to the cover shall include thoroughly cleaning the contact and weldment area of all rust, dirt and contaminates. The Contractor shall assure a solid strong weld. The welds shall be smooth and thoroughly cleaned of flux and spatter. The grounding installation shall not affect the proper seating of the cover when closed.

The grounding cable shall be paid for separately.

Method of Measurement. Units measured for payment will be counted on a per handhole basis, regardless of the type of handhole and its location.

Basis of Payment. This work shall be paid for at the contract unit price each for GROUNDING EXISTING HANDHOLE FRAME AND COVER which shall be payment in full for grounding the handhole complete.

RE-OPTIMIZE TRAFFIC SIGNAL SYSTEM

This work shall consist of providing a revised Signal Coordination and Timing (SCAT) Report and implementing optimized timings to an existing previously optimized closed loop traffic signal system. This work is required due to the addition of a signalized intersection to an existing

system or a modification of an existing signalized intersection which affects the quality of an existing system's operation. MAINTENANCE OF THE SUBJECT INTERSECTION SHALL NOT BE ACCEPTED BY THE DEPARTMENT UNTIL THIS WORK IS COMPLETED.

After the new signalized intersection is added or the existing signal is modified, the traffic signal system shall be re-optimized by an approved Consultant who has previous experience in optimizing Closed Loop Traffic Signal Systems for District 1 of the Illinois Department of Transportation. The Contractor shall contact the Area Traffic Signal Operations Engineer at (708) 705-4139 for a listing of approved Consultants.

A listing of existing signal equipment, interconnect information and existing phasing/timing patterns may be obtained from the Department if available and as appropriate. The existing SCAT Report is available for review at the District One office and if the Consultant provides blank floppy disks, copies containing software runs for the existing optimized system and a timing database that includes intersection displays will be made for the Consultant. The Consultant shall consult with the Area Traffic Signal Operations Engineer prior to optimizing the system to determine if any extraordinary conditions exist that would affect traffic flows in the vicinity of the system; in which case, the Consultant may be instructed to wait until the conditions return to normal or to follow specific instructions regarding the re-optimization.

Traffic counts shall be taken at the subject intersection a minimum of 30 days after the traffic signals are approved for operation by the Area Traffic signal Operations Engineer. Seven day/twenty-four hour automatic traffic recorder counts will be required and manual turning movement counts shall be conducted from 6:30 a.m. to 9:30 a.m., 11:00 a.m. to 1:00 p.m. and 3:30 p.m. to 6:30 p.m. on typical weekday from midday Monday to midday Friday, and if necessary, on the weekend. Additional manual turning movement counts may be necessary if heavy traffic flows exist during off peak hours. The turning movement counts shall identify cars, heavy vehicles, buses, and pedestrian movements.

A Capacity Analysis shall be conducted at the subject intersection to determine its level of service and degree of saturation. Appropriate signal timings shall be developed for the subject intersection and existing timings shall be utilized for the rest of the intersections in the system with minor adjustments if necessary. Changes to the cycle lengths and offsets for the entire system may be required due to the addition/modification of the subject intersection. Both volume and occupancy shall be considered when developing the re-optimized timing program. Signal system optimization analyses shall be conducted utilizing SYNCHRO, PASSER II, TRANSYT 7F, SIGNAL 2000 or other appropriate approved computer software.

If the system is being re-optimized due to the addition of a signalized intersection, all the intersections shall be re-addressed according to the current standard of District One. The proposed signal timing plan shall be forwarded to IDOT for review prior to implementation. The timing plan shall include a traffic responsive program and a time-of-day program which may be used as a back-up system. After downloading the system timings, the Consultant shall make fine tuning adjustments to the timing in the field to alleviate observed adverse operating conditions and to enhance operations.

The Consultant shall furnish to IDOT an original and two copies of the revised SCAT Report for the re-optimized system. The report shall contain the following: turning movement and automatic traffic recorder counts, capacity analyses for each count period, computer optimization analysis for each count period, proposed implementation plans and summaries

including system description, analysis methodology, method of effectiveness comparison results and special recommendations and/or observations. The new report shall follow the format of the old report and shall incorporate all data from the old report which remains unchanged. Copies of the entire database including intersection displays and any other displays which the system software allows shall be furnished to IDOT and to IDOT's Traffic Signal Maintenance Contractor.

Basis of Payment. This work shall be paid for at the contract unit price per lump sum for RE-OPTIMIZE TRAFFIC SIGNAL SYSTEM, which price shall be payment in full for performing all work described herein.

UNIT DUCT.

All installations of Unit Duct shall be incidental to the contract and not paid for separately. Polyethylene unit duct shall be used for detector loop raceways to the handholes. On temporary traffic signal installations with detector loops, polyethylene unit duct shall be used for detector loop raceways from the saw-cut to (3 m) 10' up the wood pole, unless otherwise shown on the plans. Unit duct shall meet the requirements of NEC Article 343.

SIGNAL HEAD, LIGHT EMITTING DIODE.

a) General:

1) Signal Head, Light Emitting Diode (LED), 1 Face, (All Section Quantities), (All Mounting Types) shall meet the requirements of Sections 880 and 881 and Articles 1078.01 and 1078.02 of the "Standard Specifications for Road and Bridge Construction", adopted January 1, 2002, with the following modifications:

2) All signal and pedestrian heads shall be 300 mm (12") glossy black polycarbonate. Connecting hardware and mounting brackets shall be polycarbonate (black) or galvanized. A corrosive resistant anti-seize lubricant shall be applied to all metallic mounting bracket joints, and shall be visible to the inspector at the signal turn-on. Post top mounting collars are required on all posts, and shall be constructed of the same material as the brackets.

3) The optical unit of all traffic signal and pedestrian head sections shall be light emitting diodes (LEDs) instead of incandescent bulbs. Each signal head shall conform fully to the "Interim Purchase Specification of the Institute of Transportation Engineers (ITE) for LED Vehicle Traffic Signal Modules" published July, 1998, or applicable successor ITE specification.

4) The lens of each signal indication shall be tinted with a wavelength-matched color to reduce sun phantom effect and enhance on/off contrast. The tinting shall be uniform across the lens face. Polymeric lens shall provide a surface coating applied to provide abrasion resistance.

5) Each pedestrian signal LED module shall provide the ability to actuate the outlined upraised hand and the outlined walking person on one 12-inch (300mm) section. Two (2) sections shall be installed. The top section shall be wired to illuminate only the upraised hand and the bottom section shall be the walking man. "Egg Crate" type sun

shields are not permitted. All figures must be a minimum of 9 inches (225mm) in height and easily identified from a distance of 120-feet (36.6m).

6) The LED modules shall provide constant light output under power. Modules with dimming capabilities shall have the option disabled or set on a non-dimming operation.

7) In the event of a power outage, light output from the LED modules shall cease instantaneously.

8) In addition to conforming with the requirements for circular LED signal modules, LED arrow indication modules shall meet existing specifications stated in the ITE Standard: "Vehicle Traffic Control Signal Heads," section 9.01. The LEDs arrow indication shall be a solid display with a minimum of three (3) outlining rows of LEDs and at least one (1) fill row of LEDs. The LEDs shall be spread evenly across the illuminated portion of the arrow area.

9) The LED signal modules shall be replaced or repaired if an LED signal module fails to function as intended due to workmanship or material defects within the first 60 months from the date of delivery. LED signal modules which exhibit luminous intensities less than the minimum values specified in Section 4.1.1 of the Interim Purchase Specification of the ITE for LED Vehicle Traffic Signal Modules within the first 60 months of the date of delivery shall be replaced or repaired. The manufacturer's written warranty for the LED signal modules shall be dated, signed by an Officer of the company and included in the product submittal to the State.

10) Each module shall consist of an assembly that utilizes LEDs as the light source in lieu of an incandescent lamp for use in traffic signal sections.

11) The LEDs utilized in the modules shall be AlInGaP technology for red, yellow, Portland orange (pedestrian) and white (pedestrian) indications, and GaN for green indications, and shall be the ultra bright type rated for 100,000 hours of continuous operation from -40°C to +74°C.

12) The individual LEDs shall be wired such that a catastrophic loss or the failure of one or more LED will not result in the loss of the entire module.

b) Electrical

1) Maximum power consumption for LED modules is per Table 1.

2) LED modules will have EPA Energy Star compliance ratings, if applicable to that shape, size and color.

3) The modules shall operate from a 60 HZ ±3 HZ AC line over a voltage ranging from 95 volts to 135 volts. The fluctuations of line voltage shall have no visible effect on the luminous intensity of the indications.

4) Operating voltage of the modules shall be 120 VAC. All parameters shall be measured at this voltage.

5) The LED signal module shall have a power factor of 0.90 or greater.

6) Total harmonic distortion (current and voltage) induced into an AC power line by a LED signal module shall not exceed 20 percent.

7) The signal module on-board circuitry shall include voltage surge protection to withstand high-repetition noise transients as stated in Section 2.1.6 of NEMA Standard TS-2, 1992.

8) The LED circuitry shall prevent perceptible flicker to the unaided eye over the voltage range specified above.

9) All wiring and terminal blocks shall meet the requirements of Section 13.02 of the ITE Publication: Equipment and Material Standards, Chapter 2 (Vehicle Traffic Control Signal Heads).

10) The modules shall be operationally compatible with currently used controller assemblies (solid state load switches, flashers, and conflict monitors).

11) When a current of 20 mA AC (or less) is applied to the unit, the voltage read across the two leads shall be 15 VAC or less.

12) The modules and associated on-board circuitry must meet Class A emission limits referred in Federal Communications Commission (FCC) Title 47, SubPart B, Section 15 regulations concerning the emission of electronic noise.

c) Photometric Requirements

1) The minimum initial luminous intensity values for the modules shall be as stated in Table 2 and/or Table 4 at 25°C.

2) The modules shall meet or exceed the illumination values as shown in Table 3 and/or Table 4, throughout the useful life based on normal use in a traffic signal operation over the operating temperature range.

3) The measured chromaticity coordinates of the modules shall conform to the chromaticity requirements of Table 5, throughout the useful life over the operating temperature range.

d) Environmental Requirements

1) The LED signal module shall be rated for use in the operating temperature range of -40°C (-40°F) to +74°C (+165°F). The modules shall meet all specifications throughout this range.

2) The LED signal module shall be protected against dust and moisture intrusion per the requirements of NEMA Standard 250-1991 for Type 4 enclosures to protect all internal components.

e) Construction

1) The LED signal module shall be a single, self-contained device, not requiring on-site assembly for installation. The power supply for the module shall be integral to the unit.

2) The circuit board and power supply shall be contained inside the module.

3) The assembly and manufacturing process for the LED signal assembly shall be designed to assure all internal components are adequately supported to withstand mechanical shock and vibration from high winds and other sources.

f) Materials

1) Material used for the lens and signal module construction shall conform to ASTM specifications for the materials.

2) Enclosures containing either the power supply or electronic components of the signal module shall be made of UL94VO flame retardant materials. The lens of the signal module is excluded from this requirement.

g) Traffic Signal and Pedestrian LED Module Identification

1) Each module shall have the manufacturer's name, trademark, model number, serial number, date of manufacture (month-year), and lot number as identification permanently marked on the back of the module.

2) The following operating characteristics shall be permanently marked on the back of the module: rated voltage and rated power in Watts and Volt-Ampere.

3) Each module shall have a symbol of the type of module (i.e. circle, arrow, etc.) in the color of the module. The symbol shall be 25.4 mm (one inch) in diameter. Additionally, the color shall be written out in 12.7mm (½ in) letters next to the symbol.

4) If a specific mounting orientation is required, each module shall have prominent and permanent marking(s) for correct indexing and orientation within a signal housing. The markings shall consist of an up arrow, or the word "UP" or "TOP".

h) Traffic Signal LED Module

1) Modules can be manufactured under this specification for the following faces:

a 300 mm (12-inch) circular, multi-section
b 300 mm (12-inch) arrow, multi-section
c 300 mm (12-inch) pedestrian, 2 sections

2) The maximum weight of a module shall be 1.8 kg (4 lbs.).

3) Each module shall be a sealed unit to include all parts necessary for operation (a printed circuit board, power supply, a lens and gasket, etc.), and shall be weather proof after installation and connection.

i) Retrofit Traffic Signal Module

1) The following specification requirements apply to the Retrofit module only. All general specifications apply unless specifically superceded in this section.

2) Retrofit modules can be manufactured under this specification for the following faces:

a 300 mm (12-inch) circular, multi-section
b 300 mm (12-inch) arrow, multi-section
c 300 mm (12-inch) pedestrian, 2 sections

3) The module shall fit into existing traffic signal section housings built to the specifications detailed in ITE Publication: Equipment and Material Standards, Chapter (Vehicle Traffic Control Signal Heads).

4) Each Retrofit module shall be designed to be installed in the doorframe of a standard traffic signal housing. The Retrofit module shall be sealed in the doorframe with a one-piece EPDM (ethylene propylene rubber) gasket.

5) The maximum weight of a Retrofit module shall be 1.8 kg (4 lbs.).

6) Each Retrofit module shall be a sealed unit to include all parts necessary for operation (a printed circuit board, power supply, a lens and gasket, etc.), and shall be weather proof after installation and connection.

7) The lens of the Retrofit module shall be integral to the unit, shall be convex with a smooth outer surface and made of plastic or of glass.

j) Two secured, color coded, 600 V, 20 AWG minimum, jacketed wires, conforming to the National Electric Code, rated for service at +105°C, are to be provided for electrical connection for each LED signal module. Conductors for modules, including Retrofit modules, shall be 39.4-inches (1m) in length, with quick disconnect terminals attached.

k) Lens

1) The lens of the module shall be tinted and integral to the unit, convex with a smooth outer surface and made of plastic.

2) The use of tinting or other materials to enhance ON/OFF contrasts shall not affect chromaticity and shall be uniform across the face of the lens.

3) The LED signal module lens shall be UV stabilized and shall be capable of withstanding ultraviolet (direct sunlight) exposure for a minimum period of 60 months without exhibiting evidence of deterioration.

4) The polymeric lens shall have a surface coating or chemical surface treatment to provide front surface abrasion resistance.

l) The following specification requirements apply to the 12-inch (300 mm) arrow module only. All general specifications apply unless specifically superceded in this section.

1) The arrow module shall meet specifications stated in Section 9.01 of the ITE Publication: Equipment and Material Standards, Chapter 2 (Vehicle Traffic Control Signal Heads) for arrow indications.

2) The LEDs shall be spread evenly across the illuminated portion of the arrow area.

m) The following specification requirements apply to the 12-inch (300 mm) PV module only. All general specifications apply unless specifically superceded in this section.

1) The module shall be a module designed and constructed to be installed in a programmed visibility (PV) signal housing without modification to the housing.

2) The LEDs shall be spread evenly across the module.

Basis of Payment. This item shall be paid for at the contract unit price each for SIGNAL HEAD, LED, of the type specified, which price shall be payment in full for furnishing the equipment described above including signal head, LED(s) modules, all mounting hardware, and installing them in satisfactory operating condition.

The type specified will indicate the number of signal faces, the number of signal sections, and the method of mounting.

Pedestrian head(s) shall be paid for at the contract unit price each for PEDESTRIAN SIGNAL HEAD, LED, of the type specified and of the particular kind of material when specified.

The type specified will indicate the number of faces and the method of mounting.

When installed in an existing signal head, this item shall be paid for at the contract unit price each for SIGNAL HEAD, LED of the type specified, RETROFIT, which price shall be payment in full for furnishing the equipment described above including LED(s) modules, all mounting hardware, and installing them in satisfactory operating condition.

The type specified will indicate the number of signal faces, the number of signal sections, and the method of mounting.

When installed in an existing signal head, this item shall be paid for at the contract unit price each for PEDESTRIAN SIGNAL HEAD, LED, of the type specified, RETROFIT, which price shall be payment in full for furnishing the equipment described above including LED(s) modules, all mounting hardware, and installing them in satisfactory operating condition.

The type specified will indicate the number of faces and the method of mounting.

TABLES

Table 1 Maximum Power Consumption (in Watts)

	Red		Yellow		Green	
Temperature	25°C	74°C	25°C	74°C	25°C	74°C
300 mm (12-inch) circular	11	17	22	25	15	15
300 mm (12-inch)arrow	9	12	10	12	11	11
	Hand–Portland Orange		Person-White			
Pedestrian Indication	6.2		6.3			

Table 2 Minimum Initial Intensities for Circular Indications (in cd)

	300 mm (12-inch)		
Angle(v,h)	Red	Yellow	Green
2.5, ±2.5	399	798	798
2.5, ±7.5	295	589	589
2.5, ±12.5	166	333	333
2.5, ±17.5	90	181	181
7.5, ±2.5	266	532	532
7.5, ±7.5	238	475	475
7.5, ±12.5	171	342	342
7.5, ±17.	105	209	209
7.5, ±22.5	45	90	90
7.5, ±27.5	19	38	38
12.5, ±2.5	59	119	119
12.5, ±7.5	57	114	114
12.5, ±12.5	52	105	105
12.5, ±17.5	40	81	81
12.5, ±22.5	26	52	52
12.5, ±27.5	19	38	38
17.5, ±2.5	26	52	52
17.5, ±7.5	26	52	52
17.5, ±12.5	26	52	52
17.5, ±17.5	26	52	52
17.5, ±22.5	24	48	48
17.5, ±27.5	19	38	38

Table 3 Maintained Minimum Intensities for Circular Indications (in cd)

	300 mm (12-inch)		
Angle(v,h)	Red	Yellow	Green
2.5, ±2.5	339	678	678
2.5, ±7.5	251	501	501
2.5, ±12.5	141	283	283
2.5, ±17.5	77	154	154
7.5, ±2.5	226	452	452
7.5, ±7.5	202	404	404
7.5, ±12.5	145	291	291
7.5, ±17.	89	178	178
7.5, ±22.5	38	77	77
7.5, ±27.5	16	32	32
12.5, ±2.5	50	101	101
12.5, ±7.5	48	97	97
12.5, ±12.5	44	89	89
12.5, ±17.5	34	69	69
12.5, ±22.5	22	44	44
12.5, ±27.5	16	32	32
17.5, ±2.5	22	44	44
17.5, ±7.5	22	44	44
17.5, ±12.5	22	44	44
17.5, ±17.5	22	44	44
17.5, ±22.5	20	41	41
17.5, ±27.5	16	32	32

Table 4 Minimum Initial & Maintained Intensities for Arrow and Pedestrian Indications (in cd/m2)

	Red	Yellow	Green
Arrow Indication	5,500	11,000	11,000

Table 5 Chromaticity Standards (CIE Chart) Section 8.04 of

Red	Y: not greater than 0.308, or less than 0.998 – x
Yellow	Y: not less than 0.411, nor less than 0.995 - x,
Green	Y: Not less than 0.506 -.519x, nor less than 0.150 + 1.068x, nor more than 0.730 - x

MODIFY EXISTING CONTROLLER (SPECIAL)

This work shall be in accordance with Section 895 of the Standard Specifications and shall include all modifications and peripheral equipment necessary for modifying the existing controller to accommodate the construction staging as indicated in the plans or as directed by the Engineer. This item shall include modifying the controller as many times as necessary to accommodate the staging. It is anticipated that the modifications will be necessary at the beginning of the Stage I Traffic Control Plan, at the beginning of the Stage II Traffic Control Plan, and at the end of the Traffic Control Plan to return the controller to its normal operation.

The Contractor shall be responsible for maintaining the existing traffic signal installation during construction. During all stages of construction, the Contractor shall be responsible for disabling the appropriate phases, for the safe and effective operation of the intersection, and for the return of the intersection controller to its original phasing as indicated in the plans or as directed by the Engineer.

If the Contractor is not able to perform the controller modifications detailed in the plans, he shall contact the Village's electrical maintenance contractor (Pinner Electric, 708-485-7577) and the traffic signal vendor (Traffic Control Corporation, 630-543-1300) and arrange to have them perform the work at no additional cost to the Village.

All necessary material, parts and labor required for modifying the controller to accommodate the temporary traffic signal phasing stages shall be considered incidental to this pay item. Maintenance of existing traffic signal installation shall be paid for separately.

This work will be paid for at the contract unit price each for MODIFY EXISTING CONTROLLER (SPECIAL), which price shall be payment in full for furnishing all materials, parts and labor to modify the existing controller as indicated in the plans and to the satisfaction of the Engineer.

ELECTRIC CABLE IN CONDUIT, COMMUNICATION NO. 16 6 PAIR

This work shall consist of furnishing and installing a communications cable furnished by Clifford of Vermont, Inc., or approved equal, in existing and new conduit. The cable shall consist of 16 AWG solid bare copper twisted-pair conductors. The cable shall have a .005" corrugated overall copper tape shield and polyethylene insulation. The nominal outside diameter shall be .715". The cable shall conform to the IMSA 20-2 polyethylene specifications and have the following pair color combinations:

Pair No.	Tip	Ring
1	White	Blue
2	White	Orange
3	White	Green
4	White	Brown
5	White	Slate
6	Red	Blue

The communications cable, No. 16 6 Pair shall be spliced to the MVP Cable in the base of the signal mast arm pole on which the MVP is mounted. The MVP cable shall be provided by the MVP manufacturer. The communications cable shall be provided by the contractor. The conductors from the two cables shall be spliced using the 3M Scotchlok gel-filled splice tabs (part number 314). Each splice shall be individually protected with shrink tubing. The individual splices shall also be bundled together and protected with shrink tubing.

The cost of all work associated with splicing the cables shall be considered incidental to the cost of the communications cable, No. 16 6 pair.

The twisted-pair conductors from the cables shall be spliced as shown in the following table:

MVP Cable			Communications Cable (No. 16, 6 Pair)		Min-Hub Interface Panel	
MVP Connector Pin	Pair	Conductor Color	Conductor Color	Pair	Terminal Position	Signal
R	Red/Black	Black	Blue	Red/Blue	5	-Sup Com
D	Red/Black	Red	Red	Red/Blue	4	+Sup Com
U	Blue/Black	Black	White	White/Blue	5	-Sup Com
P	Blue/Black	Blue	Blue	White/Blue	4	+Sup Com
E	Yellow/Black	Black	White	White/Orange	7	-Det Com
F	Yellow/Black	Yellow	Orange	White/Orange	6	+Det Com
H	White/Black	Black	White	White/Slate	9	-Video
J	White/Black	White	Slate	White/Slate	8	+Video
N	N/A	Green/Yellow	Green	White/Green	3	Earth Gnd
B	Brown/Black	Black	White	White/Brown	2	-24 VAC
A	Brown Black	Brown	Brown	White/Brown	1	+24 VAC

Basis of Payment: This work will be paid for at the contract unit price per foot for ELECTRIC CABLE IN CONDUIT, COMMUNICATION NO. 16 6 PAIR, which price shall be payment in full for furnishing, installing and making all electrical connections necessary for proper operation.

ELECTRIC CABLE IN CONDUIT, VIDEO, NO. 20 3C

This work shall consist of furnishing and installing a Belden 9803 Direct Burial multi-conductor cable or an approved equal for the Dome Camera. The cable shall consist of 20AWG solid tinned copper conductors, polypropylene insulation, aluminum-polyester shield overall with shorting fold and 22 AWG solid tinned copper drain wire. The cable shall have a black high-density polyethylene jacket and a nominal outside diameter of .205 inches. The color code for the cable shall be white, red and black.

Basis of Payment: This work will be paid for at the contract unit price per foot (meter) for ELECTRIC CABLE IN CONDUIT, VIDEO, NO. 20 3C, which price shall be payment in full for furnishing the material, making all electrical connections and installing the cable complete, measured as specified herein.

VIDEO DETECTION SYSTEM

This specification defines the minimum requirements for a wide area video vehicle detection system consisting of 1 or more MVP sensors, 1 or more communications Mini-Hub modules and 1 or more MVP interface panels.

The Video Detection System shall be compatible with existing Video Detection systems in use by the Village of Lombard. All system components shall be manufactured using a Quality System that is ISO9002 registered. Written confirmation of ISO9002 registration shall be available from the manufacturer prior to bid acceptance if requested.

1.1 MVP Sensor

a. The MVP sensor shall be:

(1) An integrated imaging CCD array with optics, high-speed, image-processing hardware and a general-purpose CPU bundled into a sealed and pressurized enclosure.

(2) Equipped with a sunshield to reflect solar heat and to shield the CCD array from direct exposure to the sun.

(3) Equipped with a faceplate heater to melt accumulated ice, snow, or fog from the view of the camera.

b. The CCD array shall be directly controlled by the general-purpose CPU, thus providing high video quality for detection that has virtually no noise to degrade detection performance.

c. The optics and camera electronics shall be directly controlled for optimal illumination for traffic detection.

d. The MVP sensor shall operate at a maximum rate of 30 frames per second when configured for the RS-170 (US) video standard and 25 frames per second for the CCIR (Euro) video standard.

e. The MVP sensor shall process a minimum of twenty detector zones simultaneously placed anywhere in the field of view of the sensor.

f. The video output shall have the ability to selectively show overlaid graphics indicating the current real-time detection state of each individual detector defined in the video.

g. The sensor output RS-170 or CCIR video shall be viewed with any compatible video-display device.

1.1.1 MVP Sensor Detector Types

The MVP sensor shall be able to be programmed with a variety of detector types that perform specific functions. The general functions performed by the detectors shall include:

a. Presence/passage detection of moving and stopped vehicles.

b. Enable detection based on the direction of travel and/or exclusively for stopped vehicles.

c. Measure speed.

d. Generate a variety of alarms based on measured traffic conditions.

e. Combine the output of several detectors with logical operators and optionally modify the cumulative state based on delay or extension timers and the state of any associated signal phase state.

f. Each of the detector types shall optionally be made visible in the live video output of the sensor.

The allocation of these functional detection capabilities to programmable detector types is described below.

Different detector types shall be selectable via software. Detector types shall include:

a. Count detectors: Outputs traffic volume statistics.

b. Presence detectors: Indicates presence of a vehicle, stopped vehicle, or vehicles traveling in the wrong direction.

c. Speed detectors: Provides vehicle speed, length, and classification.

d. Detector Functions: Combines outputs of multiple detectors via Boolean logic functions.

e. Input Detector: Provides states of a traffic controller's signal phase.

1.1.1.1. MVP Sensor External interfaces

The external interfaces to The MVP sensor shall include:

a. A supervisor communications port to configure and provide general communications.

b. A detector port specifically to exchange detector state data with the Hub or Mini-Hub.

c. Differential video out.

d. Standard analog video out.

e. 24 VAC/DC power to operate the sensor.

1.1.1.2. Supervisor Communications Port

a. The MVP sensor shall use a half-duplex, RS-485 multi-drop network protocol to facilitate communications via a network of Hubs or Mini-Hubs to a remote or local PC client/server application.

b. The communications port shall allow the user to update the embedded software with a new software release and interact with a PC client/server application for all of the various detection requests supported by The MVP sensor.

c. The communications protocol over the supervisor communications port shall be the UDP/IP message packet and routing standard.

d. This protocol shall be used throughout the field network of MVP sensors, Hubs and the host PC server application.

1.1.1.3. Detector I/O Port

a. The MVP sensor detector port shall provide a dedicated, half-duplex RS-485 interface between The MVP sensor and a Hub or Mini-Hub.

b. The real-time state of phase inputs shall be transmitted to The MVP sensor.

c. This MVP sensor shall exchange input and output state data between the Hub and Mini-Hub every 100 ms.

d. The communications protocol shall be UDP/IP over the single twisted-pair wiring.

e. A Hub or Mini-Hub shall subsequently translate the detection states, in an electrically compatible manner, to a traffic signal controller:

(1) Single pin state outputs shall be applied (by the Hub or Mini-Hub) immediately upon receipt of the state change:

(a) Each on or off pulse shall be guaranteed a minimum pulse width of 100 ms.

(b) The output occupancy shall be corrected to maintain a cumulative error of ±1 sec.

Speed outputs from 2 pins shall be delayed by 200 ms, and reflect the true output of the detector to ±1 ms.

f. The multi-drop connection shall support up to 8 simultaneous MVP sensor connections to a Hub.

1.1.1.4 Differential Video

a. The MVP sensor shall output full motion video using a differential video port in either RS-170 or CCIR format.

b. The differential shall be transmitted over a single twisted pair.

1.1.1.5. Standard Video

a. The MVP sensor shall output full-motion video directly using a standard analog video coax connector on the back of the sensor enclosure.

b. The video output shall be either RS-170 or CCIR format.

1.1.1.6. Power

a. The MVP sensor shall operate on 24 VAC/DC, 50/60Hz at a maximum of 30 watts.

b. The camera and processor electronics shall consume a maximum of 10 watts.

c. The remaining 20 watts shall support an enclosure heater.

1.1.2 MVP Sensor Operations Log

The MVP sensor shall maintain a non-volatile operations log, which minimally contains:

a. Revision numbers for the current MVP sensor hardware and software components in operation.

b. Title and comments for the specific detector configuration file in operation.

c. Date and time the last detector configuration file was downloaded to The MVP sensor.

d. Date and time the operation log was last cleared.

e. Date and time communications were opened or closed with The MVP sensor.

f. Date and time of last power-up.

Time-stamped MVP sensor, self-diagnosed hardware, and software errors that shall aid in system maintenance and troubleshooting.

1.1.3 MVP Sensor Vehicle Detection Performance

The real time detection performance of The MVP sensor shall be optimized by following the set of guidelines for:

a. The traffic application to perform.

b. MVP sensor mounting location.

c. The number of traffic lanes to monitor.

d. The sizing, placement, and orientation of vehicle detectors.

e. Traffic approaching and/or receding from the sensor's field of view.

f. Minimizing the effects of lane changing maneuvers.

1.1.3.1. Detection Zone Placement

a. The video detection system shall provide flexible detection zone placement anywhere and at any orientation within the field of view of The MVP sensor. Preferred detector configurations shall be:

(1) Detection zones placed across lanes of traffic for optimal count accuracy.

(2) Detection zones placed parallel to lanes of traffic for optimal presence detection accuracy of moving or stopped vehicles.

b. A single detection zone shall be able to replace one or more conventional detector loops connected in series.

c. Detection zones shall be able to be overlapped for optimal road coverage.

d. In addition, selective groups of detectors shall be able to be logically combined into a single output by using optional delay and extend timing and signal state information.

e. Optimal detection shall be achieved when The MVP sensor placement provides an unobstructed view of each traffic lane where vehicle detection is required.

Examples of obstructions are not limited to fixed objects. Obstruction of the view can also occur when vehicles from a lane nearer to the sensor obscure the view of the roadway of a lane further away from the sensor.

1.1.3.2. Detection Zone Programming

a. Placement of detection zones shall be by means of a supervisor computer (IBM-compatible PC) using the Windows 95, 98, or Windows NT 4.0 operating systems, a keyboard, and a mouse.

b. The VGA monitor shall be able to show the detection zones superimposed on still images of traffic scenes.

c. The supervisor computer's mouse and keyboard shall be used to:

(1) Place, size, and orient detection zones to provide optimal road coverage for vehicle detection.

(2) Modify detector parameters for site geometry to optimize performance.

(3) Edit previously defined detector configurations.

(4) Adjust the detection zone size and placement.

(5) Add detectors for additional traffic applications.

(6) Reprogram the sensor for different traffic applications, changes in installation site geometry, or traffic rerouting.

d. It shall be possible to:

(1) Download detector configurations from the supervisor computer to The MVP sensor.

(2) Upload the current detector configuration that is running in The MVP sensor.

(3) Back up detector configurations by saving them to the supervisor computer's removable or fixed disks.

(4) Perform the above upload, store, and retrieve functions for video snapshots of The MVP sensors' view.

1.1.3.3. Detection Zone Operation

The MVP sensor real-time detection operation shall be verifiable through the following means:

a. The primary method shall be to view the video output of the sensor with any standard video display device (monitor).

b. The video output of The MVP sensor (available as analog coax or differential twisted pair) shall be capable of selectively transmitting:

(1) Camera video only.

(2) Video overlaid with the current real-time detection state of each detector.

The video with overlaid detection zones shall display each detector as filled, when the state of the detector is ON, or as transparent, when the state of the detector is OFF. Each detector shall be selectively assignable to be visible or hidden in the detector flashing video display when the detector configuration file is programmed.

(1) Camera video with overlayed, scaled cross hairs that are useful for aiming the sensor (during installation).

Additional methods of verifying The MVP sensor operation shall be to:

a. Electrically monitor assigned contact closure pinouts at a Hub or Mini-Hub TS1 interface card. Each pin of an EIM-P card or Mini-Hub shall have one associated LED output to reflect its output state.

b. View the associated output LED state on the card:

(1) An LED shall be ON when its assigned detector or signal controller input phase is on.

(2) An LED shall be OFF when its assigned detector is off.

1.1.3.4. Optimal Detection

a. The video detection system shall optimally detect vehicle passage and presence when the:

(1) MVP sensor is mounted 30 feet (9m) or higher above the roadway.

(2) Image sensor is adjacent to the desired coverage area.

(3) Distance to the farthest detection zone locations is not greater than ten (10) times the mounting height of The MVP sensor.

b. The recommended deployment geometry for optimal detection also requires that there be an unobstructed view of each traveled lane where detection is required. Although optimal detection may be obtained when The MVP sensor is mounted directly above the traveled lanes, The MVP sensor shall not be required to be directly over the roadway.

c. The MVP sensor shall be able to view either approaching or receding traffic or both in the same field of view. The preferred image sensor orientation shall be to view approaching traffic since there are more high contrast features on vehicles as viewed from the front rather than the rear.

d. The MVP sensor, when placed at a mounting height that minimizes vehicle image occlusion and equipped with a lens to match the width of the road, shall be able to monitor a maximum of six (6) to eight (8) traffic lanes simultaneously.

   As an example, available infrastructure on which to mount MVP sensors are typically forty (40) feet (12 m) high, which can adequately cover four (4) to five (5) traveled lanes if the pole is within ten (10) feet (3 m) of the nearest traveled lanes.

e. Detecting traffic in six to eight lanes at a forty-foot (12 m) mounting height shall require that The MVP sensor be centered over the traveled lanes for optimal detection.

The following two figures show examples of MVP sensor placement to achieve optimal vehicle counting for count station traffic applications. If fewer lanes of traffic are being monitored than are shown in the figures below, The MVP sensor height can be lowered to a minimum of thirty feet (9 m).

However, lower mounting heights are not generally recommended because there is increased likelihood that mist and spray from vehicles will collect on the faceplate of the sensor enclosure and distort/cloud the image seen by The MVP sensor. Also, the minimum MVP sensor height and restrictions on its location are provided to minimize visual cross-lane and down-lane occlusion from The MVP sensor's perspective view.

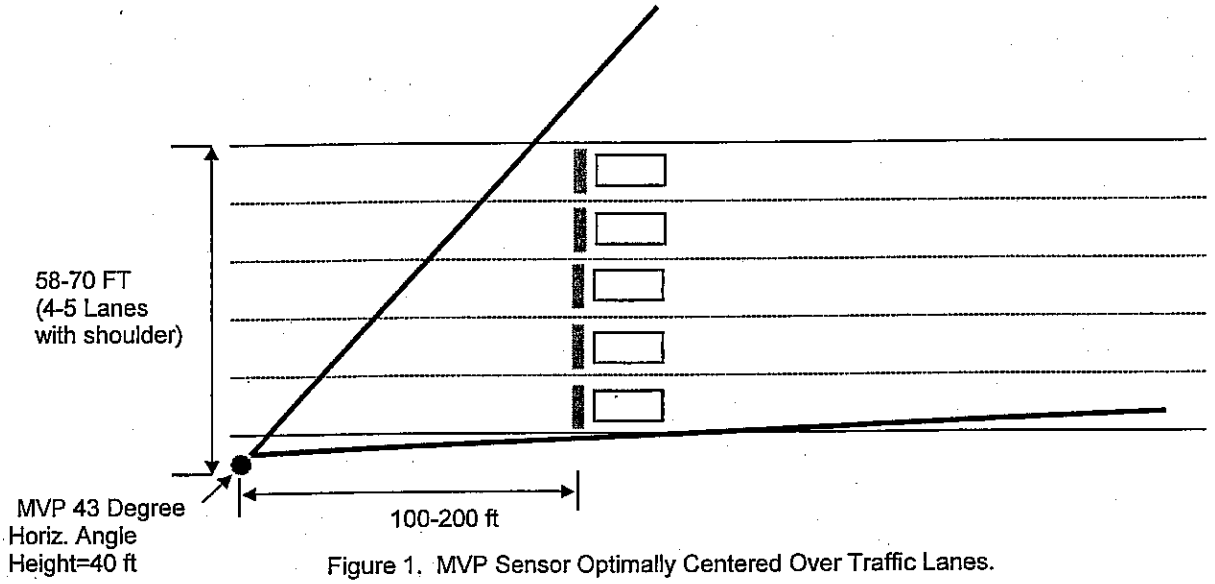

Figure 1. MVP Sensor Optimally Centered Over Traffic Lanes.

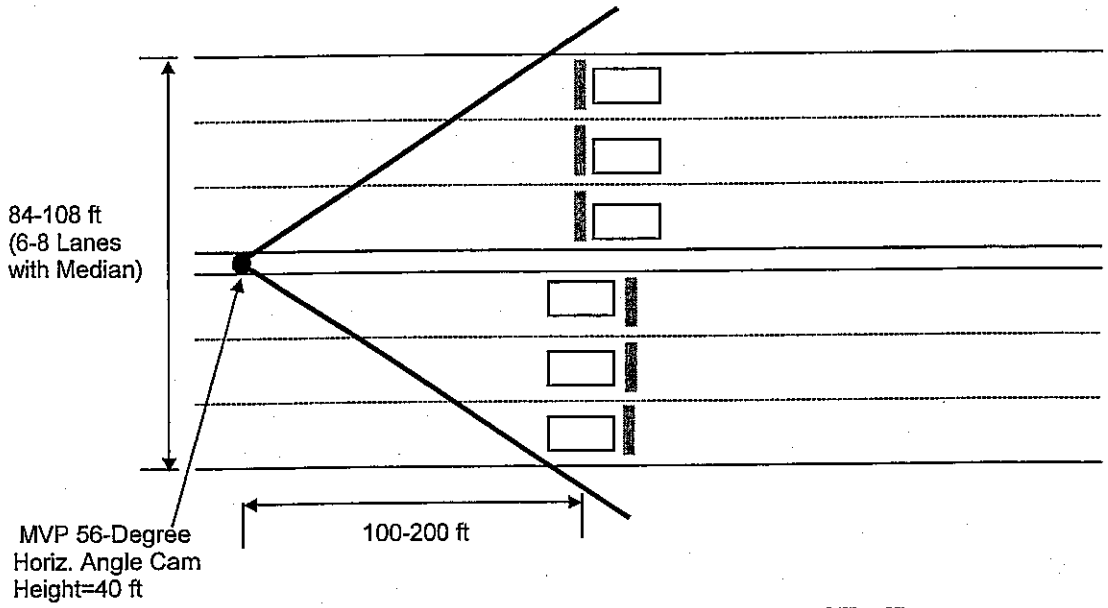

Figure 2. MVP Sensor Adjacent to Lanes of Traffic.

The following figure shows an example of optimal MVP sensor placement to achieve optimal vehicle presence detection of moving and stopped vehicles for intersection-control, traffic applications.

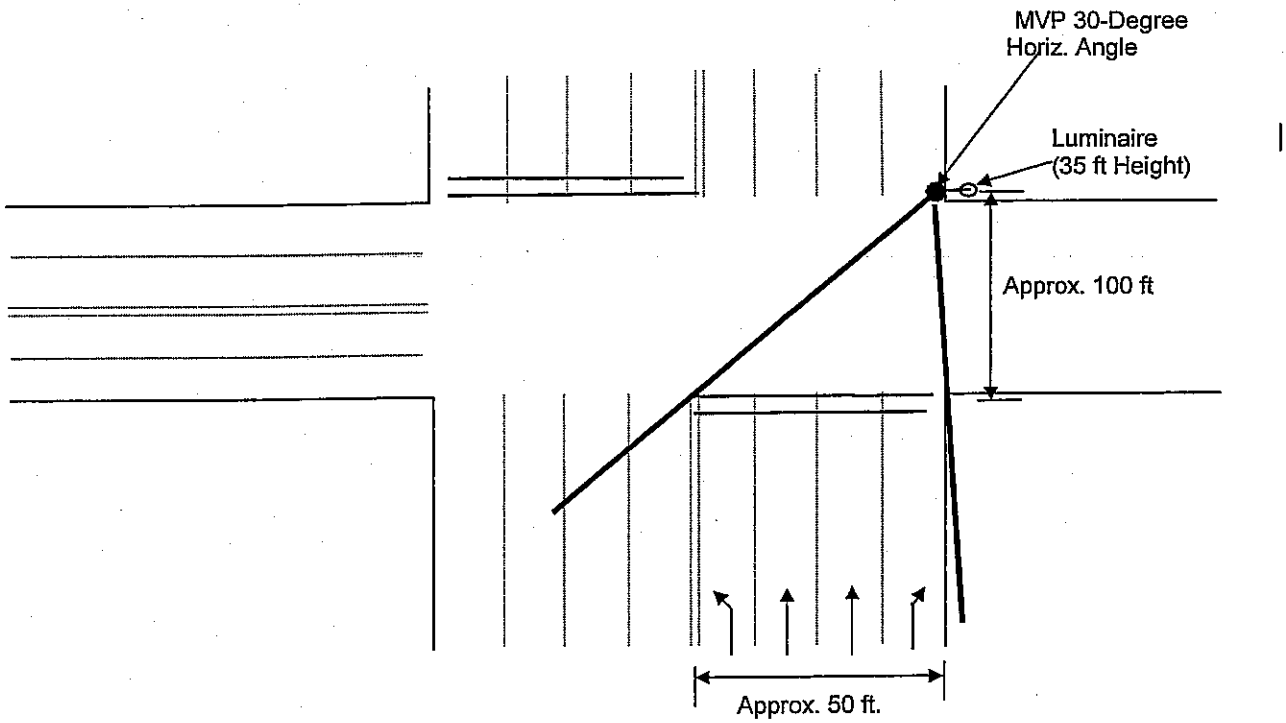

Figure 3. MVP Sensor Location for Optimal Stop Line Detection.

1.1.3.5. Count Detection Performance

Using a MVP sensor installed within the optimal viewing specifications described above for count station traffic applications, the system shall be able to accurately count vehicles with less than:

a. At least 96% accuracy under normal operating conditions (day and night).

b. At least 93% accuracy under artifact conditions.

Artifact conditions are combinations of weather and lighting conditions that result from shadows, fog, rain, snow, etc. The volume count error shall be:

a. For the entire roadway (all traveled lanes).

b. Compiled over time intervals that contain a minimum of one hundred (100) vehicles to ensure statistical significance.

1.1.3.6. Demand Presence Detection Performance

a. Using a MVP sensor installed within the optimal viewing specifications described above for intersection control traffic applications, the system shall be able to accurately provide demand presence detection.

b. The demand presence accuracy shall be based on the ability to enable a protected turning movement on an intersection stop line, when a demand exist

c. The probability of not detecting a vehicle for demand presence shall be less than one (1) percent error under all operating conditions.

(1) In the presence of artifact conditions, The MVP sensor shall minimize extraneous (false) protected movement calls to less than seven percent.

(2) To ensure statistical significance, the demand presence accuracy and error shall be calculated over time intervals that contain a minimum of one hundred (100) protected turning movements.

(3) These performance specifications shall be achieved with a minimum of two (2) presence detectors coupled with a single detector function (Type-9) to provide adequate road coverage to sample the random arrival patterns of vehicles at the stop line.

d. The calculation of the demand presence error shall not include turning movements where vehicles do not pass through the presence detectors, or where they stop short or stop beyond the combined detection zones.

1.1.3.7. Speed Detection Performance

a. The MVP sensor shall accurately measure average (arithmetic mean) speed of multiple vehicles with more than 98% accuracy under all operating conditions for approaching and receding traffic.

b. The average speed measurement shall include more than 10 vehicles in the sample to ensure statistical significance.

c. Optimal speed detection performance requires the sensor location to follow the specifications described above for count station traffic applications with the exception that the sensor must be higher than forty (40) feet (13 m). The MVP sensor shall accurately measure individual vehicle speeds with more than:

(1) 93% accuracy under all operating conditions for vehicles approaching the sensor (viewing the front end of vehicles).

(2) 92% accuracy for vehicles receding from the sensor (viewing the rear end of vehicles).

d. These specifications shall apply to vehicles that travel through both the count and speed detector pair and shall not include partial detection situations created by lane changing maneuvers.

1.1.4 MVP Sensor Hardware

a. The MVP sensor video detection system shall use medium resolution, monochrome image sensors as the video source for real-time vehicle detection.

As a minimum, each image sensor shall provide the following capabilities:

(1) Images shall be produced with a CCD sensing element with horizontal resolution of at least 500 lines and vertical resolution of at least 350 lines. Images shall be output:

- As a video signal conforming to RS170, RS 170A or NTSC specifications.
- As a video signal conforming to CCIR or PAL specifications.

b. Useable video and resolvable features in the video image shall be produced when those features have luminance levels as low as 0.1 lux at night.

c. Useable video and resolvable features in the video image shall be produced when those features have luminance levels as high 10,000 lux during the day.

d. Useable video and resolvable features in the video image shall be produced when the ratio of the luminance of the resolved features in any single video frame is 300:1.

e. Automatic gain, automatic iris, and absolute black reference controls shall be furnished:

(1) Automatic iris shall operate in a damped manner with a time constant of 0.25 seconds or longer.

(2) Automatic gain shall operate in a damped manner with a time constant of one second and automatic gain shall not be applied to the video signal until the lens aperture is fully opened by the automatic iris control.

(3) Automatic gain, automatic iris, and sensitivity shall be factory adjusted and/or modified as required for proper performance with the video detection system.

(4) The black level shall be adjusted to 0 IRE units. The iris video level shall be adjusted so that a no-contrast image has 40 IRE units of video.

(5) The lens ALC shall be adjusted to average.

f. An optical filter and appropriate electronic circuitry shall be included in the image sensor to suppress "blooming" effects at night.

g. Gamma for the image sensor shall be present at the factory to a value of 1.0.

1.1.4.1. MVP Sensor Optics

a. The MVP sensor shall be equipped with an auto-iris lens with fixed focal length to suit the site.

b. The maximum aperture of the lens shall be pre-focused at infinity at the factory and shall not be smaller than f1.8 and the minimum aperture of the lens shall not be larger than f300.

1.1.4.2. MVP Sensor Enclosure

The MVP sensor and lens assembly shall be housed in an environmental enclosure that provides the following capabilities:

a. The enclosure shall be waterproof and dust-tight to NEMA-4 specifications, and shall be pressurized with dry nitrogen to 5 ± 1 psi.

b. The enclosure shall allow The MVP sensor to operate satisfactorily over an ambient temperature range from -34 degrees C to +60 degrees C while exposed to precipitation as well as direct sunlight.

c. The enclosure shall allow the image sensor horizon to be rotated during field installation.

d. The enclosure shall include a provision at the rear of the enclosure for connection of the factory-fabricated power, communications and video signal cable. Input power to the environmental enclosure shall be 24 VAC/DC and either 50 or 60 Hz as an option.

e. A heater shall be at the front of the enclosure to prevent the formation of ice and condensation in cold weather, as well as to assure proper operation of the lens' iris mechanism. The heater shall not interfere with the operation of the image sensor electronics, and it shall not cause interference with the video signal.

f. The enclosure shall be light-colored and shall include a sun shield to minimize solar heating and glare. The front edge of the sunshield shall protrude beyond the front edge of the environmental enclosure and shall include provision to divert water flow to the sides of the sunshield. The amount of overhang of the sunshield shall be adjustable to prevent direct sunlight from entering the lens or hitting the faceplate.

g. The total weight of the image sensor in the environmental enclosure with sunshield shall be less than 2.3 kg (6 pounds).

h. When operating in the environmental enclosure with the power, communication and video signal cable connected, the image sensor shall meet FCC class B requirements for electromagnetic interference emissions.

1.1.5 MVP Sensor Electrical

a. The video output of The MVP sensor shall be isolated from earth ground.

b. All video connections from the sensor to the interface panel shall also be isolated from earth ground.

c. The video output, communication, and power stages of the sensor shall include transient protection to prevent damage to the sensor due to voltage transients occurring on the cable leading from The MVP sensor to other field terminations.

d. Connections for video, communications and power shall be made to the image sensor using a single 18-pin circular metal shell connector (Bendix PT07C-14-18P or equivalent).

e. The mating cable shall use a right-angle shell and shall be available in lengths of 5, 10, 30, and 60 feet to accommodate various installations.

f. The MVP sensor shall have passed requirements for and received the CE mark.

1.2 Mini-Hub Module

The Mini-Hub module shall:

a. Provide 8 detector outputs, as well as 4 phase inputs, for one MVP sensor to communicate real-time detection states and alarms to a local traffic signal controller.

b. Provide a single point of maintenance for supervisor applications software to communicate to and configure the connected MVP sensor, and to access MVP sensor video.

c. Provide a single point of maintenance for The MVP sensor.

d. MVP sensor supervisor port communications shall be converted to RS-232 levels, and shall be accessed through a 9-pin, DTE connector on the front panel, labeled Supervisor.

e. Use output read backs that shall notify The MVP sensor of output errors.

f. The Mini-Hub module shall not require software or setup and shall self-configure on power-up.

1.2.1 Hardware

a. The Mini-Hub module shall physically conform to a NEMA TS2 type C or D loop amplifier module and also be compatible with a 170-style input file.

b. The Mini-Hub shall plug directly into a NEMA TS2 type C or D detector rack or a 170-style input file.

c. The Mini-Hub shall have an embedded micro-controller to perform all TS1 input/output and communications functions.

d. The micro-controller shall utilize an on-board, Read-Only-Memory to store its operational and diagnostic software, which shall be programmed at the factory, and shall not require any field configuration for the Mini-Hub to operate.

1.2.2 Electrical

a. The Mini-Hub module shall use the detector rack or input file DC power pin and logic ground pin for power.

b. Current draw shall be less than 75 mili-amperes.

c. The Mini-Hub shall provide 1500 Vrms isolation between rack logic ground and street wiring.

1.2.3 Environmental

The Mini-Hub operating ambient temperature range shall be from -30 to +165 degrees F. The relative humidity shall not exceed 95 percent non-condensing over the temperature range.

1.2.4 Front Panel I/O

The Mini-Hub front panel shall provide:

a. Status LEDs that reflect the real-time, ON/OFF state of the assigned detector input and output pins.

b. A status LED indicating the operational health of the Mini-Hub module (ON = OK, OFF = Fault, or Blink Code if Power up diagnostics failed).

c. An analog, video output BNC connector for the NTSC (RS-170) video standard.

d. A DB-9, female connector for The MVP sensor detector I/O port, MVP sensor supervisor I/O port, and twisted-pair differential video.

e. A DB-9, male DTE connector as a single point access to connect a local Supervisor PC hosting local client server programs to program and monitor The MVP sensor.

f. A DB-15, male connector that optionally provides inputs and outputs in place of the rear-edge card connector signals.

1.2.5 MVP Sensor Input and Output Assignments

a. Input and Output assignments shall be programmed into The MVP sensor through the local "Supervisor" port on the Mini-Hub.

b. The MVP sensor shall automatically tell the Mini-Hub which input and output pins are utilized during operation.

c. The module shall require no software configuration or setup.

d. Consecutive pairs of outputs shall emulate the output of two speed detectors to report speed of individual vehicles.

1.2.6 Jumper Configurable TS1 I/O

Two jumpers shall permit the Mini-Hub to be configured so that all inputs and outputs go, either to the rear-edge card connector, or to the front panel, DB-15 connector.

1.2.7 Power up Diagnostics and Run-time Operation

a. The Mini-Hub module shall perform a diagnostic after power up and will flash a diagnostic blink code if a failure occurred.

b. Power up diagnostics shall check PROM, SRAM, communications hardware, and output pins.

c. If the Mini-Hub enters a fail mode, it shall output constant calls to all output pins on the front panel and rear-edge card connector.

d. If diagnostics pass, the Mini-Hub shall enter the operational mode, communicating with The MVP sensor and setting the outputs as defined by The MVP sensor in real time.

e. While the Mini-Hub is performing diagnostics, all of the output pins shall output constant calls.

f. For all but special alarm output cases, all outputs are turned ON during power-up and remain ON until the first actuation assigned to each output clears the output OFF.

1.3 Mini-Hub Interface Panel

The Mini-Hub interface panel shall support a single MVP sensor and Mini-Hub by providing: a wire termination block for MVP sensor power, data, and video connections; a power transformer for The MVP sensor; electrical surge protectors to isolate the Mini-Hub and MVP sensor; and an interface connector to cable directly to the Mini-Hub front panel.

1.3.1 MVP Sensor Power

a. The interface panel shall provide power for one MVP sensor through a step-down transformer, taking local line voltage and producing 28 VAC, 50/60 Hz, at about 30 watts.

b. A ½-amp, slow-blo fuse shall individually protect the step-down transformers.

1.3.2 High Energy Transient Suppression

a. The interface panel shall provide termination points and high-energy transient protection for all street wiring of The MVP sensor.

b. The interface panel shall provide high-energy crowbar transient protection, to NEMA TS2 standards. The transient suppression shall protect all of the interconnected hardware.

1.3.3 Interface Panel I/O Terminations

Terminations shall be provided for:

a. One MVP sensor.

b. One twisted-pair wire for supervisor communications.

c. A twisted-pair for detector port I/O.

d. A twisted-pair for differential video.

e. Three termination points for power to The MVP sensor.

VIDEO TRANSMISSION SYSTEM

I. General

This specification sets forth the minimum requirements for a system that allows a user to remotely monitor an intersection via a single ISDN communication link.

II. System Components

The System shall consist of one (1) telephone video transmitter, one (1) ISDN terminal adapter and one (1) outdoor CCTV camera dome drive system.

A. Telephone Video Transmitter

1. The video receiver shall provide an initial image transmission time of 0.4-2.5 seconds via an ISDN communication link. Subsequent updates shall typically be less than 0.5 second depending on scene changes and communication rates.

2. The video receiver shall support NTSC/RS170 image resolutions up to 752 x 480.

3. The video transmitter shall have a minimum of ten (10) video input channels each accepting a 1 volt peak to peak signal. Each video input shall be switchable between 75 ohm or high impedance.

4. The video transmitter shall have a minimum of one video output designed to drive a 75 ohm load.

5. The video transmitter shall have a minimum of ten (10) external alarm inputs that trigger an alarm and store images from the corresponding video channel. The inputs shall be programmable to trigger on contact opening or closure.

6. The video transmitter shall have a minimum of 10 open collector control outputs that correspond to the control inputs of the receiver.

7. The video transmitter shall support PSTN, ISDN, and cellular phone and RF communication links.

8. The video transmitter shall support programmable asynchronous or synchronous communications interfaces with a maximum baud rate of 192 KBPS.

9. The video transmitter shall be configured with a bi-directional RS-232 interface that shall allow a user to remotely communicate with DCE devices connected to it.

10. The video transmitter shall be configured with a RS-232 asynchronous serial port.

11. The video transmitter shall be configured with an RS-485 port that shall be used to control pan/tilt/zoom telemetry stations.

12. A hand-held device used for in-field programming shall be included with be included with the video transmitter.

13. The video transmitter shall operate with 90-130 volts AC, 18 VA (max) at 110 volts.

14. The video transmitter shall have dimensions of 482 mm (W) x 44.4 mm (H) x 290 mm (L).

B. ISDN Modem

1. The ISDN modem shall support error free data transmission up to 128 kbps on two B channels without data compression.

2. The ISDN modem shall support Multilink PPP, ITU-T V.120, Async BONDING, and Fallback protocols.

3. The ISDN modem shall be configurable via a font-panel keyboard interface.

4. The Lake County Division of Transportation shall be responsible for establishing type R ISDN service at the intersection.

5. Outdoor CCTV Camera Dome Drive System (Color, Pendant)

C. The outdoor CCTV camera dome drive system shall consist of a discreet miniature camera dome, variable speed, high speed pan and tilt drive unit, high resolution ¼" color CCD camera, 16X auto focusing motorized zoom lens with additional 8X electronic digital zoom capability, integral addressable, control code selectable receiver/driver and quick install pendant mount.

1. The lower dome shall meet or exceed the following design and performance specifications:

   a The lower dome shall be a maximum of 5.9" in diameter and extend to a maximum of 2.75" below the pendant back box.

   b The lower dome shall be of acrylic material, optically clear with no distortion in any portion of the dome, to +2° above the horizontal.

   c The lower dome shall be available in clear, smoked, chrome or gold versions.

d The lower dome and trim ring shall easily snap and fasten into place.

e The lower dome shall weigh a maximum of 1 lb. 2-oz.

2. The variable speed, high speed pan and tilt drive unit shall meet or exceed the following design and performance specifications:

a The pan and tilt drive unit shall be capable of continuous 360° pan rotation with a vertical unobstructed tilt of +2° to -92°.

b The pan and tilt drive unit shall operate under manual control in pan function from a creep speed of 0.5° to 40° per second, 150° per second in turbo. In tilt function from 0.5° to 40° per second.

c The pan and tilt drive unit shall operate under variable speed automatic preset control at a pan speed of 250° and a tilt speed of 100° per second.

d The pan and tilt drive unit shall be capable of up to 64 preset positions with a 20- character label available for each position.

e The pan and tilt drive unit shall feature proportionate turbo pan speed that shall decrease turbo pan speed proportionate to the depth of zoom.

f The pan and tilt drive unit shall provide a resume after alarm feature that shall allow the dome to return to a previous state after alarm acknowledgment.

g The pan and tilt drive unit shall provide a power up feature allowing the user to specify what condition the dome will assume whenever the power is cycled.

h The dome drive unit shall provide a video-blanking mode that allows up to eight programmable zones to be set to output blank video.

i The pan and tilt drive unit shall be capable of 6-minute system pattern zones and auto scan with soft limit stops.

j The pan and tilt drive unit shall provide a variable scan speed that can be adjusted between 1 and 40 degrees per second.

k The pan and tilt drive unit shall feature variable speed, continuous duty motors capable of full operation from 18 to 30 VAC; 24VAC nominal.

l The pan and tilt drive shall require a maximum of 20VA, draw a maximum of 17 watts and shall be fused for 1.6 Amps.

m The pan and tilt drive shall provide a rotating ABS liner with sealed fixed bubble for minimum light loss while maintaining a discrete appearance.

n The pan and tilt drive shall provide for two auxiliary outputs and seven alarm inputs. Auxiliary output (1) shall be Form C relay contacts at <40V, 2A maximum, while auxiliary output (2) shall be open collector 32 VDC maximum at 150 mA maximum output. Alarm inputs shall be normally open dry contacts with common ground.

o The auxiliary outputs shall be programmable to activate on alarm.

p The pan and tilt drive unit shall provide the ability to define alarms as high or low priority.

q The pan and tilt drive unit shall feature eight zones with a 20-character label for each.

r The pan and tilt drive unit shall provide for programmable limit stops for Auto/Random Scan and Frame Scan modes.

s The pan and tilt drive unit shall feature an integral receiver/driver with DIP Switch selectable settings for Coaxitron, RS-485/422 "P" and "D" series protocols as well as an optional translator card to allow the dome drive unit to accept control commands from various manufacturer's control systems.

t The pan and tilt drive unit shall provide a built-in menu system for on-screen setup of camera functions.

u The pan and tilt drive unit shall be designed with an auto-flip feature that shall rotate the dome 180° at the bottom of tilt travel.

v The pan and tilt, dome drive, receiver/driver and camera/lens assembly shall weigh a maximum of 2-lb. 11-oz.

3. The high resolution color CCD camera shall meet or succeed the following design and performance specifications:

a The color CCD camera shall be a ¼" interline transfer imager meeting NTSC signal format specifications.

b The camera shall be 2:1 interlace, with AC line lock which is adjustable via remote control.

c The image sensor shall have a total pixel array of 811(H) x 508(V) with an effective pixel array of 768(H) x 494(V).

d The camera shall provide a resolution of 450 TV lines horizontal.

e The camera shall feature digital signal processing, DSPIII-R.

f The camera shall have automatic white balance with manual override.

g The camera shall feature a remote setup including white balance, sharpness and backlight compensation, accomplished via remote control from the head end.

h The camera shall provide for automatic electronic iris and a shutter speed range of 1/60 to 1/30,000.

i The camera shall have automatic iris control and gain control with manual override.

j The camera shall provide for back light compensation.

k The camera/lens package shall provide for a sensitivity of 2 lux at F1.4, signal level of 40 IRE, gain high.

l The camera shall provide a video output of .714V +/- .07V (100 IRE +/- 10 IRE).

m The camera shall have a signal to noise ratio of >46dB.

4. The motorized zoom lens shall meet or exceed the following design and performance specifications:

a The motorized zoom lens shall be a 16X optical zoom, 4mm to 64mm, F 1.4

b The zoom lens shall feature and additional 8X electronic zoom for a total of 128X with minimum digital distortion.

c The lens shall have a horizontal angle of view of 47° at 4mm and 3° at 64mm telephoto zoom.

d The lens shall feature an automatic focus with manual override.

e The lens shall provide a mean time between failure (MTBF) of > 2 million cycles nominal, zoom focus and iris functions.

5. The pendant back box assembly shall meet or exceed the following design and performance specifications:

a The pendant back box assembly shall be a single model for indoor or outdoor applications with just the addition of a heater option.

b The pendant back box shall feature a quick, positive disconnect to the dome drive unit.

c The pendant back box shall be rated for NEMA 3R, IP65, IP66 and NEMA 4 with an optional bubble.

d The pendant back box shall weigh a maximum of 2 lb., 4 oz.

e The pendant back box shall measure 8.52 in diameter including dome and a maximum of 9.16 in overall length.

f The pendant back box shall feature easy installation with a quick mount pole, adapter.

g The pendant back box shall provide for cable entry via a 1.5" NPT fitting.

h The pendant back box shall be for indoor/outdoor use and allow an operating temperature range of 32° to 122° Fahrenheit without heaters and from -60° Fahrenheit to 122° Fahrenheit with a low temperature heater kit.

i The heater kit shall draw a maximum of 90 watts.

III. Training

Two days of on-site training shall be provided as part of the contract.

IV. Warranty

The remote video detection monitoring system shall be warranted by its supplier for a minimum of one (1) year.

V. Basis of Payment

This item will be paid for at the contractor unit price each for Video Transmission System, which price shall be payment if full for furnishing all associated equipment required, installing the system complete and in place, and placing the system in operation to the satisfaction of the engineer.

NPDES PERMIT

A separate Notice of Intent (NOI) will not be required for this construction project. The Village of Lombard has filed a MS4 General Permit Notice of Intent under the National Pollutant Discharge Elimination System Phase II. This NOI covers all Village sponsored construction projects. The Village is a co-applicant with DuPage County, 29 other municipalities and 9 Township Highway Road Districts in the countywide permit. A copy of the Village of Lombard MS4 General Permit NOI follows; a copy of the entire MS4 General Permit is maintained on file at the DuPage County Department of Development and Environmental Concerns Offices.

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
NOTICE OF INTENT
FOR GENERAL PERMIT FOR DISCHARGES FROM
SMALL MUNICIPAL SEPARATE STORM SEWER SYSTEMS
(MS4s)

Input forms in Word format are available by via email. marilyn.davenport@epa.state.il.us or by calling the Permit Section at 217/782-0610
See address for mailing on page 4

For Office Use Only – Permit No. ILR40_____

Part I. General Information

1. MS4 Operator Name: Village of Lombard

2. MS4 Operator Mailing Address:
   Street- 255 E. Wilson Avenue City- Lombard
   State- Illinois Zip Code- 60148-3931

3. Operator Type: City

4. Operator Status: Local

5. Name(s) of Governmental Entity(ies) in which MS4 is located: County of DuPage (Co-Applicant)

6. Area of land that drains to your MS4 (in square miles): 10.5

5. Latitude/Longitude at approximate geographical center of MS4 for which you are requesting authorization to discharge:
   Latitude: 41 DEG. 53 MIN. 0 SEC. Longitude: 88 DEG. 1 MIN 0 SEC.

8. Name(s) of known receiving waters: *Attach additional sheets (Attachment 1) as necessary*:

1. DuPage River East Branch
2. Westwood Creek (Tributary to Salt Creek)
3. Sugar Creek (Tributary to Salt Creek)
4. Ginger Creek (Tributary to Salt Creek)
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____

9. Persons Responsible for Implementation/Coordination of Storm Water Management Program:

Name	Title	Telephone No.	Area of Responsibility
David Gorman, PE	Develop. Engineer	630/620-5973	Supervises Private Property Construction
David Dratnol, PE	Village Engineer	630/620-5740	Supervises Public Property Construction
Angela Podesta	Utilities Superint.	630/620-5740	Supervises Storm Sewer O & M

Information required by this form must be provided to comply with 415 ILCS 5/39 (2000). Failure to do so may prevent this form from being processed and could result in your application being denied.

Illinois Department of Transportation

Storm Water Pollution Prevention Plan

Route	F.A.U. 2615 - Highland Avenue	Marked	-
Section	00-00140-00-PV	Project No.	M-8003(143)
County	DuPage		

This plan has been prepared to comply with the provisions of the NPDES Permit Number ILR10, issued by the Illinois Environmental Protection Agency for storm water discharges from Construction Site Activities.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature

26 december 2003
Date

Project Manager
Title

1. Site Description

a. The following is a description of the construction activity which is the subject of this plan (use additional pages, as necessary):
The project shall consist of roadway reconstruction including the removal of pavement, curb and gutter, concrete median, sidewalk and driveways, and the construction of concrete pavement, curb and gutter, concrete median, sidewalk, driveways, and retaining walls. Three existing traffic signals will be modernized with video detection and interconnect system. The contract also includes storm sewer, water main, pavement markings, pavement markers and landscape restoration.

b. The following is a description of the intended sequence of major activities which will disturb soils for major portions of the construction site, such as grubbing, excavation and grading (use additional pages, as necessary):
1. *pavement removal west side of roadway*
2. *storm sewer removal and installation*
3. *water main installation*
4. *pavement construction west side of the roadway*
5. *same sequence on east side of the roadway*

c. The total area of the construction site is estimated to be *7.0* acres.

The total area of the site that it is estimated will be disturbed by excavation, grading or other activities is 7.0 acres.

d. The estimated runoff coefficients of the various areas of the site after construction activities are completed are contained in the project drainage study which is hereby incorporated by reference in this plan. Information describing the soils at the site is contained either in the Soils Report for the project, which is hereby incorporated by reference, or in an attachment to this plan.
Estimated runoff coefficient is 0.80.

e. The design/project report, hydraulic report, or plan documents, hereby incorporated by reference, contain site map(s) indicating drainage patterns and approximate slopes anticipated after major grading activities, areas of major soil disturbance, the location of major structural and nonstructural controls identified in the plan, the location of areas where stabilization practices are expected to occur, surface waters (including wetlands), and locations where storm water is discharged to a surface water.
See plan documents.

f. The names of receiving water(s) and areal extent of wetland acreage at the site are in the design/project report or plan documents which are incorporated by reference as a part of this plan.
There are no wetlands within the project limits. Storm water leaves the site through three separate storm sewer systems.

2. Controls

This section of the plan addresses the various controls that will be implemented for each of the major construction activities described in 1.b. above. For each measure discussed, the contractor that will be responsible for its implementation is indicated. Each such contractor has signed the required certification on forms which are attached to, and a part of, this plan:

a. Erosion and Sediment Controls

(i) Stabilization Practices. Provided below is a description of interim and permanent stabilization practices, including site-specific scheduling of the implementation of the practices. Site plans will ensure that existing vegetation is preserved where attainable and disturbed portions of the site will be stabilized. Stabilization practices may include: temporary seeding, permanent seeding, mulching, geotextiles, sod stabilization, vegetative buffer strips, protection of trees, preservation of mature vegetation, and other appropriate measures. Except as provided in 2.a.(i).(A) and 2.b., stabilization measures shall be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, but in no case more than 14 days after the construction activity in that portion of the site has temporarily or permanently ceased on all disturbed portions of the site where construction activity will not occur for a period of 21 or more calendar days.

(A) where the initiation of stabilization measures by the 14th day after construction activity temporarily or permanently ceases is precluded by snow cover, stabilization measures shall be initiated as soon as practicable thereafter.

Description of Stabilization Practices (use additional pages, as necessary):

Perimeter Erosion Barrier will be installed at the project limits to prevent sediment from flowing off-site. Inlet and Pipe Protection will be installed around parkway drainage structures. All disturbed areas will either receive temporary seeding or be perennially sodded within 14 days of disturbance.

(ii) Structural Practices. Provided below is a description of structural practices that will be implemented, to the degree attainable, to divert flows from exposed soils, store flows or otherwise limit runoff and the discharge of pollutants from exposed areas of the site. Such practices may include silt fences, earth dikes, drainage swales, sediment traps, check dams, subsurface drains, pipe slope drains, level spreaders, storm drain inlet protection, rock outlet protection, reinforced soil retaining systems, gabions and temporary or permanent sediment basins. The installation of these devices may be subject to Section 404 of the Clean Water Act.

Description of Structural Practices (use additional pages, as necessary):

Perimeter Erosion Barrier will be installed at the construction limits at location which storm water flow runs off-site to prevent sediment from leaving the site. Inlet and Pipe Protection will prevent sediment from entering the existing storm sewer.

b. Storm Water Management

Provided below is a description of measures that will be installed during the construction process to control pollutants in storm water discharges that will occur after construction operations have been completed. The installation of these devices may be subject to Section 404 of the Clean Water Act.

(i) Such practices may include: storm water detention structures (including wet ponds); storm water retention structures; flow attenuation by use of open vegetated swales and natural depressions; infiltration of runoff on site; and sequential systems (which combine several practices). **The practices selected for implementation were determined on the basis of the technical guidance in Section 10-300 (Design Considerations) in Chapter 10 (Erosion and Sedimentation Control) of the Illinois Department of Transportation Drainage Manual. If practices other than those discussed in Section 10-300 are selected for implementation or if practices are applied to situations different from those covered in Section 10-300, the technical basis for such decisions will be explained below.**
All disturbed areas will be sodded.

(ii) Velocity dissipation devices will be placed at discharge locations and along the length of any outfall channel as necessary to provide a non-erosive velocity flow from the structure to a water course so that the natural physical and biological characteristics and functions are maintained and protected (e.g., maintenance of hydrologic conditions, such as the hydroperiod and hydrodynamics present prior to the initiation of construction activities).

Description of Storm Water Management Controls (use additional pages, as necessary):

The storm sewer is discharged through three existing storm sewer systems with no additional flow to impact the downstream characteristics. This will be checked daily by the resident engineer to verify the natural physical and biological characteristics and functions are being maintained and protected.

c. Other Controls

(i) Waste Disposal. No solid materials, including building materials, shall be discharged into Waters of the State, except as authorized by a Section 404 permit.
N/A

(ii) The provisions of this plan shall ensure and demonstrate compliance with applicable State and/or local waste disposal, sanitary sewer or septic system regulations.
N/A

d. Approved State or Local Plans

The management practices, controls and provisions contained in this plan will be in accordance with IDOT specifications, which are at least as protective as the requirements contained in the Illinois Environmental Protection Agency's Illinois Urban Manual, 1995. Procedures and requirements specified in applicable sediment and erosion site plans or storm water management plans approved by local officials shall be described or incorporated by reference in the space provided below. Requirements specified in sediment and erosion site plans or site permits or storm water management site plans or site permits approved by local officials that are applicable to protecting surface water resources are, upon submittal of an NOI to be authorized to discharge under permit ILR10 incorporated by reference and are enforceable under this permit even if they are not specifically included in the plan.

Description of procedures and requirements specified in applicable sediment and erosion site plans or storm water management plans approved by local officials:
No additional local requirements
Description of procedures and requirements specified in applicable sediment and erosion site plans or storm water management plans approved by local officials:
No additional local requirements

3. Maintenance

The following is a description of procedures that will be used to maintain, in good and effective operating conditions, vegetation, erosion and sediment control measures and other protective measures identified in this plan (use additional pages, as necessary):

All erosion control measures will be monitored by the resident engineer and contractor. Erosion control measures will be maintained by the contractor in accordance with the Standard Specifications. If needed weekly or bi-weekly meetings will be set up to discuss erosion control issues.

4. Inspections

Qualified personnel shall inspect disturbed areas of the construction site which have not been finally stabilized, structural control measures, and locations where vehicles enter or exit the site. Such inspections shall be conducted at least once every seven (7) calendar days and within 24 hours of the end of a storm that is 0.5 inches or greater or equivalent snowfall.

a. Disturbed areas and areas used for storage of materials that are exposed to precipitation shall be inspected for evidence of, or the potential for, pollutants entering the drainage system. Erosion and sediment control measures identified in the plan shall be observed to ensure that they are operating correctly. Where discharge locations or points are accessible, they shall be inspected to ascertain whether erosion control measures are effective in preventing significant impacts to receiving waters. Locations where vehicles enter or exit the site shall be inspected for evidence of off site sediment tracking.

b. Based on the results of the inspection, the description of potential pollutant sources identified in section 1 above and pollution prevention measures identified in section 2 above shall be revised as appropriate as soon as practicable after such inspection. Any changes to this plan resulting from the required inspections shall be implemented within 7 calendar days following the inspection.

c. A report summarizing the scope of the inspection, name(s) and qualifications of personnel making the inspection, the date(s) of the inspection, major observations relating to the implementation of this storm water pollution prevention plan, and actions taken in accordance with section 4.b. shall be made and retained as part of the plan for at least three (3) years after the date of the inspection. The report shall be signed in accordance with Part VI. G of the general permit.

d. If any violation of the provisions of this plan is identified during the conduct of the construction work covered by this plan, the Resident Engineer or Resident Technician shall complete and file an "Incidence of Noncompliance" (ION) report for the identified violation. The Resident Engineer or Resident Technician shall use forms provided by the Illinois Environmental Protection Agency and shall include specific information on the cause of noncompliance, actions which were taken to prevent any further causes of noncompliance, and a statement detailing any environmental impact which may have resulted from the noncompliance. All reports of noncompliance shall be signed by a responsible authority in accordance with Part VI. G of the general permit.

The report of noncompliance shall be mailed to the following address:

Illinois Environmental Protection Agency
Division of Water Pollution Control
Attn: Compliance Assurance Section
1021 North Grand East
Post Office Box 19276
Springfield, Illinois 62794-9276

5. Non-Storm Water Discharges

Except for flows from fire fighting activities, sources of non-storm water that is combined with storm water discharges associated with the industrial activity addressed in this plan must be described below. Appropriate pollution prevention measures, as described below, will be implemented for the non-storm water component(s) of the discharge. (Use additional pages as necessary to describe non-storm water discharges and applicable pollution control measures).

The storm water will be discharged into the three existing storm sewer systems. There will be no industry activity permitted on the site. The resident engineer will verify these activities.

Illinois Department of Transportation

Contractor Certification Statement

This certification statement is a part of the Storm Water Pollution Prevention Plan for the project described below, in accordance with NPDES Permit No. ILR10, issued by the Illinois Environmental Protection Agency on May 14, 1998.

Project Information:

Route F.A.U. 2615 – Highland Avenue Marked -

Section 00-00140-00-PV Project No. M-8003(143)

County DuPage

I certify under penalty of law that I understand the terms of the general National Pollutant Discharge Elimination System (NPDES) permit (ILR 10) that authorizes the storm water discharges associated with industrial activity from the construction site identified as part of this certification.

Signature Date

Title

Name of Firm

Street Address

City State

Zip Code

Telephone Number

N:\Lombard\00-161\ADMIN\BDE 2342 - Storm Water Pollution Prevention Plan.doc

STORM SEWER REMOVAL, UNDER 18"

This work shall consist of the removal of storm sewer and pipe culverts of various types, under 18", including reinforced concrete, PVC, corrugated metal and clay pipes. This work shall be done in accordance with Section 551 of the STANDARD SPECIFICATIONS. Removal of end sections and headwalls will be considered incidental to this pay item.

Existing storm sewer and pipe culvert sizes can be viewed on the Plan and Profile Sheets.

Trenches resulting from the removal of storm sewer or pipe culverts shall be backfilled in accordance with the applicable requirements of Article 550.07.

When proposed pavement, shoulder or driveways will be construction over or within two-feet of the trench, the trench will be backfilled and paid for as TRENCH BACKFILL, SPECIAL.

Storm sewer removal shall be paid for at the contract unit price per foot for STORM SEWER REMOVAL, UNDER 18" which price shall include all excavation, backfilling, and removing the storm sewer. No separate payment will be made for the removal of end sections or headwalls.

PROJECT Improvements to Highland Avenue, Lombard, Illinois

CLIENT Village of Lombard, Lombard, Illinois

BORING 1 DATE STARTED 1-29-02 DATE COMPLETED 1-29-02 JOB L-54,403

ELEVATIONS

GROUND SURFACE 762.2

END OF BORING 752.2

WATER LEVEL OBSERVATIONS

▼ WHILE DRILLING Dry

▽ AT END OF BORING Dry

▼ 24 HOURS

Highland Avenue
Sta. 10+50; 44' LT

LENGTH RECOVERY	SAMPLE NO.	SAMPLE TYPE	N	WC	Qu	γ_{DRY}	DEPTH	ELEV.	SOIL DESCRIPTIONS
							0.2	762.0	2.9" Bituminous Concrete
							0.9	761.3	7.6" Portland Cement Concrete
							1.1	761.1	FILL - Crushed Limestone Gravel 1" to fines
	1	SS	9-12	8.5	4.5*		2.0	760.2	FILL - Brown CLAY, trace gravel, moist (A-6) (CL)
	2	SS	7-9-12	24.2	3.0*		3.5	758.7	Very tough brown, gray and dark brown CLAY, moist (A-7-6) (CL)
	3	SS	6-8-10	20.4	2.5*				
	4	SS	8-10-10	16.9	4.5*				Very tough to hard brown and gray CLAY, trace gravel, moist A-6 (CL)
	5	SS	8-8-10	14.0	4.5*				
									End of Boring at 10.0'

* Approximate unconfined compressive strength based on measurements with a calibrated pocket penetrometer.

DISTANCE BELOW SURFACE IN FEET

0 5 10 15 20 25

Division lines between deposits represent approximate boundaries between soil types;

DRILL RIG NO. 117

151-B

SC 5403.GPJ TSC_ALL.GDT 3/11/02

PROJECT Improvements to Highland Avenue, Lombard, Illinois

CLIENT Village of Lombard, Lombard, Illinois

BORING 2 DATE STARTED 1-29-02 DATE COMPLETED 1-29-02 JOB L-54,403

ELEVATIONS

GROUND SURFACE 758.6

END OF BORING 748.6

WATER LEVEL OBSERVATIONS

▼ WHILE DRILLING Dry

▽ AT END OF BORING Dry

▼ 24 HOURS

Highland Avenue
Sta. 13+52; 45' RT

SAMPLE NO.	SAMPLE TYPE	LENGTH RECOVERY	N	WC	Qu	γ_{DRY}	DEPTH	ELEV.	SOIL DESCRIPTIONS
							0.1	758.5	1.4" Bituminous Concrete
							0.8	757.8	7.6" Portland Cement Concrete
							1.1	757.5	FILL - Crushed Limestone Gravel
1	SS		13-18	19.6	3.5*				FILL - Brown and gray CLAY, trace gravel, moist A-6 (CL)
2	SS		6-8-10	19.4	3.5*				
							3.5	755.1	FILL - Gray and dark brown CLAY (Topsoil) and CLAY, trace gravel, moist A-7-6 (CL)
3	SS		7-7-9	25.6	2.0*				
							5.5	753.1	Very tough gray and brown CLAY, trace gravel, very moist A-7-6 (CL)
4	SS		6-7-7	28.4	2.5*				
							8.0	750.6	Hard brown and gray CLAY, trace gravel, moist A-7-6 (CL)
5	SS		7-8-9	22.7	4.5+*				

End of Boring at 10.0'

* Approximate unconfined compressive strength based on measurements with a calibrated pocket penetrometer.

DISTANCE BELOW SURFACE IN FEET

0 5 10 15 20 25

Division lines between deposits represent approximate boundaries between soil types;

DRILL RIG NO. 117

151-e

SC 54403.GPJ TSC_ALL.GDT 3/11/02

PROJECT Improvements to Highland Avenue, Lombard, Illinois

CLIENT Village of Lombard, Lombard, Illinois

BORING 3 DATE STARTED 2-2-02 DATE COMPLETED 2-2-02 JOB L-54,403

ELEVATIONS

GROUND SURFACE 764.7

END OF BORING 754.7

WATER LEVEL OBSERVATIONS

▼ WHILE DRILLING Dry

▽ AT END OF BORING Dry

▼ 24 HOURS

Highland Avenue
Sta. 15+55; 55' RT

LENGTH RECOVERY	SAMPLE NO.	SAMPLE TYPE	N	WC	Qu	γ_{DRY}	DEPTH	ELEV.	SOIL DESCRIPTIONS
							0.5	764.2	FILL - Black CLAY (Topsoil)
	1	SS	3-4-5	21.9	2.5*				Sample 1: 1%=Gravel, 12%=Sand, 30%=Silt, 57%=Clay LL=42/ PL=19/ PI=23
							2.0	762.7	FILL - Brown CLAY, trace gravel, moist A-7-6 (CL)
	2	SS	1-2-2	25.6	1.5*				FILL - Brown CLAY, trace gravel, moist A-6 (CL)
	A			22.3	1.0*				
	3	SS	2-3-4				4.5	760.2	
	B			16.7	4.0*				Very tough to hard brown and gray CLAY, trace gravel, moist A-6 (CL)
							5.5	759.2	
	4	SS	3-4-5	27.5	1.75*				Tough brown and gray CLAY, trace gravel, very moist A-7-6 (CL)
							8.0	756.7	
	5	SS	9-12-13	16.7	4.5+*				Hard brown and gray CLAY, trace gravel, moist A-6 (CL)
									End of Boring at 10.0'

* Approximate unconfined compressive strength based on measurements with a calibrated pocket penetrometer.

DISTANCE BELOW SURFACE IN FEET

0 5 10 15 20 25

Division lines between deposits represent approximate boundaries between soil types;

DRILL RIG NO. 256

151-D

C 54403.GPJ TSC_ALL.GDT 3/19/02

PROJECT Improvements to Highland Avenue, Lombard, Illinois

CLIENT Village of Lombard, Lombard, Illinois

BORING 4 DATE STARTED 1-29-02 DATE COMPLETED 1-29-02 JOB L-54,403

ELEVATIONS

GROUND SURFACE 765.8

END OF BORING 755.8

WATER LEVEL OBSERVATIONS

▼ WHILE DRILLING Dry

▽ AT END OF BORING Dry

▼ 24 HOURS

Highland Avenue
Sta. 17+56; 40' LT

SAMPLE NO.	SAMPLE TYPE	LENGTH RECOVERY	N	WC	Qu	γ_{DRY}	DEPTH	ELEV.	SOIL DESCRIPTIONS
							0.0	765.8	9.7" Bituminous Concrete
							0.8	765.0	FILL - Crushed Limestone Gravel (GP)
1	SS		8-12-20	21.4	4.5+*		1.1	764.7	
2	SS		10-15-18	21.7	4.5+*				
3	SS		12-15-19	21.4	4.5+*				Hard brown and gray CLAY, trace gravel, moist A-7-6 (CL)
4	SS		10-10-13	22.0	4.5*				
							8.0	757.8	
5	SS		8-10-12	18.6	2.0*				Tough to very tough grayish-brown CLAY, trace gravel, moist A-6 (CL)

End of Boring at 10.0'

* Approximate unconfined compressive strength based on measurements with a calibrated pocket penetrometer.

DISTANCE BELOW SURFACE IN FEET

0 5 10 15 20 25

SC 5403.GPJ TSC_ALL.GDT 3/11/02

DRILL RIG NO. 117

Division lines between deposits represent approximate boundaries between soil types;

151-E

PROJECT Improvements to Highland Avenue, Lombard, Illinois

CLIENT Village of Lombard, Lombard, Illinois

BORING 5 DATE STARTED 1-29-02 DATE COMPLETED 1-29-02 JOB L-54,403

ELEVATIONS

GROUND SURFACE 765.8

END OF BORING 755.8

WATER LEVEL OBSERVATIONS

▼ WHILE DRILLING Dry

▽ AT END OF BORING Dry

▼ 24 HOURS

Highland Avenue
Sta. 18+40; 35' RT

LENGTH RECOVERY	SAMPLE NO.	SAMPLE TYPE	N	WC	Qu	γ_{DRY}	DEPTH	ELEV.	SOIL DESCRIPTIONS
							0.8	765.0	10" Portland Cement Concrete
	1	SS	5-8	18.8	4.25*				Hard brown to dark brown CLAY, trace gravel, moist A-6/A-7-6 (CL)
							2.0	763.8	
	2	SS	6-8-8	18.0	4.25*				
	3	SS	6-7-9	18.0	4.5+*				
	4	SS	7-9-13	18.0	4.5+*				Hard brown and gray CLAY, trace gravel, moist A-6/A-7-6 (CL)
	5	SS	7-7-9	17.6	4.5+*				
									End of Boring at 10.0'

* Approximate unconfined compressive strength based on measurements with a calibrated pocket penetrometer.

DISTANCE BELOW SURFACE IN FEET

0 5 10 15 20 25

DRILL RIG NO. 117

Division lines between deposits represent approximate boundaries between soil types;

151-F

SC 54403.GPJ TSC_ALL.GDT 3/11/02

PROJECT Improvements to Highland Avenue, Lombard, Illinois

CLIENT Village of Lombard, Lombard, Illinois

BORING 6 DATE STARTED 1-29-02 DATE COMPLETED 1-29-02 JOB L-54,403

ELEVATIONS

GROUND SURFACE 764.8

END OF BORING 754.8

WATER LEVEL OBSERVATIONS

▼ WHILE DRILLING Dry

▽ AT END OF BORING Dry

▼ 24 HOURS

Highland Avenue
Sta. 19+50; 15' RT

LENGTH RECOVERY	SAMPLE NO.	SAMPLE TYPE	N	WC	Qu	γ_{DRY}	DEPTH	ELEV.	SOIL DESCRIPTIONS
							0.1	764.7	1.7" Bituminous Concrete (deteriorated) Portland Cement Concrete (deteriorated)
							1.1	763.7	
	1	SS	14-16	17.0	4.5+*				Hard to very tough brown and gray CLAY, trace gravel, moist A-6/A-7-6 (CL)
	2	SS	10-12-13	17.5	3.75*				
	3	SS	7-7-9	18.0	4.0*				
	4	SS	6-7-8	21.0	3.75*				
	5	SS	6-8-10	17.1	3.75*				
									End of Boring at 10.0'

* Approximate unconfined compressive strength based on measurements with a calibrated pocket penetrometer.

DISTANCE BELOW SURFACE IN FEET

0 5 10 15 20 25

DRILL RIG NO. 117

Division lines between deposits represent approximate boundaries between soil types;

151-G

SC 54403.GPJ TSC_ALL.GDT 3/11/02

PROJECT Improvements to Highland Avenue, Lombard, Illinois

CLIENT Village of Lombard, Lombard, Illinois

BORING 7 DATE STARTED 1-29-02 DATE COMPLETED 1-29-02 JOB L-54,403

ELEVATIONS

GROUND SURFACE 756.4

END OF BORING 743.9

WATER LEVEL OBSERVATIONS

▼ WHILE DRILLING Dry

▽ AT END OF BORING Dry

▼ 24 HOURS

Highland Avenue
Sta. 22+50' 25' LT

LENGTH RECOVERY	SAMPLE NO.	SAMPLE TYPE	N	WC	Qu	γ_{DRY}	DEPTH	ELEV.	SOIL DESCRIPTIONS
							0.7	755.7	8.2" Portland Cement Concrete
							1.1	755.3	Portland Cement Concrete (deteriorated)
	1	SS	7-8	23.1	3.0*				FILL - Brown CLAY, trace gravel, very moist A-7-6 (CL)
							2.0	754.4	
	2	SS	7-7-9	12.6	N.P.				FILL - Weathered Gravel, trace clay, moist (SP/GP)
							3.5	752.9	
	3	SS	6-7-7	19.0	2.0*				FILL - Gray CLAY, trace gravel, moist A-6
							5.5	750.9	
	4	SS	2-2-3	46.2	0.5*				Soft to very soft brown and gray CLAY, very moist A-7-6
	5	SS	1-2-2	46.5	0.25*				
							10.5	745.9	
	6	SS	3-3-4	21.3	0.25*				Very soft gray CLAY, trace gravel, moist A-6

End of Boring at 12.5'

* Approximate unconfined compressive strength based on measurements with a calibrated pocket penetrometer.

N.P. Not Possible

DISTANCE BELOW SURFACE IN FEET

0 5 10 15 20 25

DRILL RIG NO. 117

Division lines between deposits represent approximate boundaries between soil types;

151-H

SC 54403.GPJ TSC_ALL.GDT 3/11/02

PROJECT Improvements to Highland Avenue, Lombard, Illinois

CLIENT Village of Lombard, Lombard, Illinois

BORING 8 DATE STARTED 3-1-02 DATE COMPLETED 3-1-02 JOB L-54,403

ELEVATIONS

GROUND SURFACE 753.5

END OF BORING 743.5

WATER LEVEL OBSERVATIONS

▼ WHILE DRILLING 5.5 '

▽ AT END OF BORING 3.0 '

▼ 24 HOURS

Highland Avenue
Sta.25+50; 28' RT

LENGTH RECOVERY	SAMPLE NO.	SAMPLE TYPE	N	WC	Qu	γ_{DRY}	DEPTH	ELEV.	SOIL DESCRIPTIONS
							0.8	752.7	10.1" Portland Cement Concrete
	1	SS	5-8-10	21.9	2.5*	105.9			FILL - Black CLAY (Topsoil), moist A-7-6
							2.0	751.5	
	2	SS	8-10-11	21.4	1.25*	106.8			▽ FILL - Brown CLAY, moist A-6
							3.5	750.0	
	3	SS	8-10-13	21.3	1.0*	107.0			▼ FILL - Brown CLAY and black CLAY (Topsoil), trace gravel, moist A-7-6
	4	SS	5-9-10	22.8	2.5*	104.3			
							8.0	745.5	Firm brown SAND, trace gravel, saturated A-1
	5	SS	3-6-7						

End of Boring at 10.0'

* Approximate unconfined compressive strength based on measurements with a calibrated pocket penetrometer.

DISTANCE BELOW SURFACE IN FEET

0 5 10 15 20 25

Division lines between deposits represent approximate boundaries between soil types;

DRILL RIG NO

151 - I

SC 5403.GPJ TSC_ALL.GDT 3/11/02

PROJECT Improvements to Highland Avenue, Lombard, Illinois

CLIENT Village of Lombard, Lombard, Illinois

BORING 9 DATE STARTED 1-28-02 DATE COMPLETED 1-28-02 JOB L-54,403

ELEVATIONS

GROUND SURFACE 758.5

END OF BORING 748.5

WATER LEVEL OBSERVATIONS

▼ WHILE DRILLING Dry

▽ AT END OF BORING Dry

▼ 24 HOURS

Highland Avenue
Sta. 28+50; 15' LT

LENGTH RECOVERY	SAMPLE NO.	SAMPLE TYPE	N	WC	Qu	γ_{DRY}	DEPTH	ELEV.	SOIL DESCRIPTIONS
							0.9	757.6	10.7" Portland Cement Concrete
	1	SS	8-10	24.4	3.0*				Black CLAY (Topsoil), very moist A-7-6 (OL)
	2	SS	8-10-11	24.8	2.25*		2.0	756.5	Very tough brown and gray CLAY, trace gravel, moist A-7-6 (CL)
	3	SS	4-5-7	23.5	2.75*				
							5.5	753.0	
	4	SS	3-3-3	27.9	0.25*				Very soft brown and gray CLAY, very moist A-6 (CL)
							8.0	750.5	
	5	SS	7-8-11	16.7	4.25*				Hard brown and gray CLAY, trace gravel, moist A-6 (CL)
									End of Boring at 10.0'

* Approximate unconfined compressive strength based on measurements with a calibrated pocket penetrometer.

DISTANCE BELOW SURFACE IN FEET

0 5 10 15 20 25

DRILL RIG NO. 117

Division lines between deposits represent approximate boundaries between soil types; [illegible]

151-5

SC 54403.GPJ TSC_ALL.GDT 3/11/02

PROJECT Improvements to Highland Avenue, Lombard, Illinois

CLIENT Village of Lombard, Lombard, Illinois

BORING 10 DATE STARTED 2-2-02 DATE COMPLETED 2-2-02 JOB L-54,403

ELEVATIONS

GROUND SURFACE 765.6

END OF BORING 755.6

WATER LEVEL OBSERVATIONS

▼ WHILE DRILLING Dry

▽ AT END OF BORING Dry

▼ 24 HOURS

Highland Avenue
Sta. 31+50; 18' RT

LENGTH RECOVERY	SAMPLE NO.	SAMPLE TYPE	N	WC	Qu	γ_{DRY}	DEPTH	ELEV.	SOIL DESCRIPTIONS
							0.8	764.8	9.8" Portland Cement Concrete
	1	SS	10-15	21.4	3.0*				FILL - Dark brown and gray CLAY, trace gravel, moist to very moist A-7-6 (CL)
	2	SS	7-7-10	24.9	2.25*				
	A			23.3	4.25*				Sample 2: L-O-I=3.5
	3	SS	4-6-9				4.5	761.1	
	B			16.9	4.5+*				
	4	SS	5-7-12	17.9	4.5*				Hard brown and gray CLAY, trace gravel, moist A-6 (CL)
	5	SS	5-7-8	18.9	4.5+*				
									End of Boring at 10.0'

* Approximate unconfined compressive strength based on measurements with a calibrated pocket penetrometer.

DISTANCE BELOW SURFACE IN FEET

0 5 10 15 20 25

SC 54403.GPJ TSC_ALL.GDT 3/11/02

DRILL RIG NO 256

Division lines between deposits represent approximate boundaries between soil types;

151-K

PROJECT Improvements to Highland Avenue, Lombard, Illinois

CLIENT Village of Lombard, Lombard, Illinois

BORING 11 DATE STARTED 1-29-02 DATE COMPLETED 1-29-02 JOB L-54,403

ELEVATIONS

GROUND SURFACE 773.5

END OF BORING 763.5

WATER LEVEL OBSERVATIONS

▼ WHILE DRILLING Dry

▽ AT END OF BORING Dry

▼ 24 HOURS

Highland Avenue
Sta. 34+50; 25' LT

LENGTH RECOVERY	SAMPLE NO.	SAMPLE TYPE	N	WC	Qu	γ_{DRY}	DEPTH	ELEV.	SOIL DESCRIPTIONS
							0.8	772.7	9.3" Portland Cement Concrete
							1.1	772.4	FILL - Crushed Limestone Gravel (GP)
	1	SS	10-15	19.6	4.25*				FILL - Brown CLAY, moist A-6/A-7-6
	2	SS	7-7-10	35.5	0.75*		2.0	771.5	Stiff brown and gray CLAY, very moist A-7-6
	3	SS	4-6-9	19.0	4.5*		3.5	770.0	Hard brown CLAY, trace gravel, moist A-6 (CL)
	4	SS	5-7-12	15.3	4.25*		5.5	768.0	Hard to very tough gray CLAY, trace gravel, moist A-6 (CL)
	5	SS	5-7-8	16.6	2.5*				End of Boring at 10.0'

* Approximate unconfined compressive strength based on measurements with a calibrated pocket penetrometer.

DISTANCE BELOW SURFACE IN FEET

0 5 10 15 20 25

SC 54403.GPJ TSC_ALL.GDT 3/11/02

DRILL RIG NO. 117

Division lines between deposits represent approximate boundaries between soil types; in situ, the transition may be gradual

151-L

PROJECT Improvements to Highland Avenue, Lombard, Illinois

CLIENT Village of Lombard, Lombard, Illinois

BORING 12 DATE STARTED 1-29-02 DATE COMPLETED 1-29-02 JOB L-54,403

ELEVATIONS

GROUND SURFACE 773.7

END OF BORING 763.7

WATER LEVEL OBSERVATIONS

▼ WHILE DRILLING Dry

▽ AT END OF BORING Dry

▼ 24 HOURS

Highland Avenue
Sta. 37+50; 8' RT

LENGTH RECOVERY	SAMPLE NO.	SAMPLE TYPE	N	WC	Qu	γ_{DRY}	DEPTH	ELEV.	SOIL DESCRIPTIONS
							0.8	772.9	9.3" Portland Cement Concrete
							1.1	772.6	FILL - Crushed Limestone Gravel 1" to fines
	1	SS	3-4	30.8	2.0*		2.0	771.7	Black CLAY (Topsoil), very moist A-7-6
	2	SS	10-12-14	25.6	2.0*		3.5	770.2	Tough to very tough brown and gray CLAY, trace gravel, moist A-7-6 (CL)
	3	SS	8-5-4	21.1	3.5*				
	4	SS	4-5-8	20.7	3.0*				Very tough brown CLAY, trace gravel, moist A-6/A-7-6 (CL)
	5	SS	4-6-10	18.9	3.75*				
									End of Boring at 10.0'

* Approximate unconfined compressive strength based on measurements with a calibrated pocket penetrometer.

DISTANCE BELOW SURFACE IN FEET

0 5 10 15 20 25

Division lines between deposits represent approximate boundaries between soil types;

DRILL RIG NO. 117

151-M

3C 54403.GPJ TSC_ALLGDT 3/19/02

PROJECT Improvements to Highland Avenue, Lombard, Illinois

CLIENT Village of Lombard, Lombard, Illinois

BORING 13 DATE STARTED 2-2-02 DATE COMPLETED 2-2-02 JOB L-54,403

ELEVATIONS

GROUND SURFACE 770.4

END OF BORING 760.4

WATER LEVEL OBSERVATIONS

▼ WHILE DRILLING Dry

▽ AT END OF BORING Dry

▼ 24 HOURS

Highland Avenue
Sta. 40+50; 20' LT

LENGTH RECOVERY	SAMPLE NO.	SAMPLE TYPE	N	WC	Qu	γ_{DRY}	DEPTH	ELEV.	SOIL DESCRIPTIONS
							0.9	769.5	10.7" Portland Cement Concrete
	A 1 B	SS	2-3	22.6	1.25*		1.1	769.3	FILL - Crushed Limestone Gravel
	2	SS	6-6-7	30.8	1.5*		2.0	768.4	FILL - Brown and gray CLAY, trace gravel, very moist A-6 (CL)
	A 3 B	SS	5-6-6	27.1 24.6	2.25* 2.25*		4.5	765.9	Black CLAY (Topsoil), very moist A-7-6 (CL)
	4	SS	5-6-6	21.6	2.75*		5.5	764.9	Very tough dark brown and gray CLAY, trace gravel, very moist A-6
	5	SS	6-7-7	19.7	3.75*				Sample 3B: 12%=Sand, 39%=Silt, 49%=Clay LL=36/ PL=18/ PI=18
									Very tough brown and gray CLAY, trace gravel, moist A-6
									End of Boring at 10.0'

* Approximate unconfined compressive strength based on measurements with a calibrated pocket penetrometer.

DISTANCE BELOW SURFACE IN FEET

0 5 10 15 20 25

SC 54403.GPJ TSC_ALL.GDT 3/19/02

DRILL RIG NO 256

Division lines between deposits represent approximate boundaries between soil types;

151-N

Disadvantaged Business Enterprise Participation

Effective: September 1, 2000
Revised: October 1, 2003

FEDERAL OBLIGATION. The Department of Transportation, as a recipient of federal financial assistance, is required to take all necessary and reasonable steps to ensure nondiscrimination in the award and administration of contracts. Consequently, the federal regulatory provisions of 49 CFR part 26 apply to this contract concerning the utilization of disadvantaged business enterprises. This Special Provision will also be used by the Department to satisfy the requirements of the Business Enterprise for Minorities, Females, and Persons with Disabilities Act, 30 ILCS 575. For the purposes of this Special Provision, a disadvantaged business enterprise (DBE) means a business certified by the Department in accordance with the requirements of 49 CFR part 26 and listed in the DBE Directory or most recent addendum.

CONTRACTOR ASSURANCE. The Contractor makes the following assurance and agrees to include the assurance in each subcontract that the Contractor signs with a subcontractor:

> The contractor, subrecipient or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR part 26 in the award and administration of federally-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the recipient deems appropriate.

OVERALL GOAL SET FOR THE DEPARTMENT. As a requirement of compliance with 49 CFR part 26, the Department has set an overall goal for DBE participation in its federally assisted contracts. That goal applies to all federal-aid funds the Department will expend in its federally assisted contracts for the subject reporting fiscal year. The Department is required to make a good faith effort to achieve the overall goal. The dollar amount paid to all approved DBE firms performing work called for in this contract is eligible to be credited toward fulfillment of the Department's overall goal.

CONTRACT GOAL TO BE ACHIEVED BY THE CONTRACTOR. This contract includes a specific DBE utilization goal established by the Department. The goal has been included because the Department has determined that the work of this contract has subcontracting opportunities that may be suitable for performance by DBE companies. This determination is based on an assessment of the type of work, the location of the work, and the availability of DBE companies to do a part of the work. The assessment indicates that, in the absence of unlawful discrimination, and in an arena of fair and open competition, DBE companies can be expected to perform 12 % of the work. This percentage is set as the DBE participation goal for this contract. Consequently, in addition to the other award criteria established for this contract, the Department will award this contract to a bidder who makes a good faith effort to meet this goal of DBE participation in the performance of the work. A bidder makes a good faith effort for award consideration if either of the following is done in accordance with the procedures set forth in this Special Provision:

(a) The bidder documents that firmly committed DBE participation has been obtained to meet the goal; or

(b) The bidder documents that a good faith effort has been made to meet the goal, even though the effort did not succeed in obtaining enough DBE participation to meet the goal.

DBE LOCATOR REFERENCES. Bidders may consult the DBE Directory as a reference source for DBE companies certified by the Department. In addition, the Department maintains a letting and item specific DBE locator information system whereby DBE companies can register their interest in providing quotes

on particular bid items advertised for letting. Information concerning DBE companies willing to quote work for particular contracts may be obtained by contacting the Department's Bureau of Small Business Enterprises at telephone number (217)785-4611, or by visiting the Department's web site at www.dot.state.il.us.

BIDDING PROCEDURES. Compliance with the bidding procedures of this Special Provision is required prior to the award of the contract and the failure of the as-read low bidder to comply will render the bid nonresponsive.

(a) In order to assure the timely award of the contract, the as-read low bidder must submit a Disadvantaged Business Utilization Plan on Department form SBE 2026 within seven (7) working days after the date of letting. To meet the seven (7) day requirement , the bidder may send the Plan by certified mail or delivery service within the seven (7) working day period. If a question arises concerning the mailing date of a Plan, the mailing date will be established by the U.S. Postal Service postmark on the original certified mail receipt from the U.S. Postal Service or the receipt issued by a delivery service. It is the responsibility of the as-read low bidder to ensure that the postmark or receipt date is affixed within the seven (7) working days if the bidder intends to rely upon mailing or delivery to satisfy the submission day requirement. The Plan is to be submitted to the Department of Transportation, Bureau of Small Business Enterprises, Contract Compliance Section, 2300 South Dirksen Parkway, Room 319, Springfield, Illinois 62764 (Telefax: (217)785-1524). It is the responsibility of the bidder to obtain confirmation of telefax delivery. The Department will not accept a Utilization Plan if it does not meet the seven (7) day submittal requirement, and the bid will be declared nonresponsive. In the event the bid is declared nonresponsive due to a failure to submit a Plan or failure to comply with the bidding procedures set forth herein, the Department may elect to cause the forfeiture of the penal sum of the bidder's proposal guaranty, and may deny authorization to bid the project if re-advertised for bids. The Department reserves the right to invite any other bidder to submit a Utilization Plan at any time for award consideration or to extend the time for award.

(b) The Utilization Plan shall indicate that the bidder either has obtained sufficient DBE participation commitments to meet the contract goal or has not obtained enough DBE participation commitments in spite of a good faith effort to meet the goal. The Utilization Plan shall further provide the name, telephone number and telefax number of a responsible official of the bidder designated for purposes of notification of plan approval or disapproval under the procedures of this Special Provision.

(c) The Utilization Plan shall include a DBE Participation Commitment Statement, Department form SBE 2025, for each DBE proposed for the performance of work to achieve the contract goal. The signatures on these forms must be original signatures. All elements of information indicated on the said form shall be provided, including but not limited to the following:

(1) The name and address of each DBE to be used;

(2) A description, including pay item numbers, of the commercially useful work to be done by each DBE;

(3) The price to be paid to each DBE for the identified work specifically stating the quantity, unit price and total subcontract price for the work to be completed by the DBE. If partial pay items are to be performed by the DBE, indicate the portion of each item, a unit price where appropriate and the subcontract price amount;

(4) A commitment statement signed by the bidder and each DBE evidencing availability and intent to perform commercially useful work on the project; and

(5) If the bidder is a joint venture comprised of DBE firms and non-DBE firms, the plan must also include a clear identification of the portion of the work to be performed by the DBE partner(s).

(d) The contract will not be awarded until the Utilization Plan submitted by the bidder is approved. The Utilization Plan will be approved by the Department if the Plan commits sufficient commercially useful DBE work performance to meet the contract goal. The Utilization Plan will not be approved by the Department if the Plan does not commit sufficient DBE performance to meet the contract goal unless the bidder documents that it made a good faith effort to meet the goal. The good faith procedures of Section VIII of this special provision apply. If the Utilization Plan is not approved because it is deficient in a technical matter, unless waived by the Department, the bidder will be notified and will be allowed no less than a five (5) working day period in order to cure the deficiency.

CALCULATING DBE PARTICIPATION. The Utilization Plan values represent work anticipated to be performed and paid for upon satisfactory completion. The Department is only able to count toward the achievement of the overall goal and the contract goal the value of payments made for the work actually performed by DBE companies. In addition, a DBE must perform a commercially useful function on the contract to be counted. A commercially useful function is generally performed when the DBE is responsible for the work and is carrying out its responsibilities by actually performing, managing, and supervising the work involved. The Department and Contractor are governed by the provisions of 49 CFR part 26.55(c) on questions of commercially useful functions as it affects the work. Specific counting guidelines are provided in 49 CFR part 26.55, the provisions of which govern over the summary contained herein.

(a) DBE as the Contractor: 100% goal credit for that portion of the work performed by the DBE's own forces, including the cost of materials and supplies. Work that a DBE subcontracts to a non-DBE firm does not count toward the DBE goals.

(b) DBE as a joint venture Contractor: 100% goal credit for that portion of the total dollar value of the contract equal to the distinct, clearly defined portion of the work performed by the DBE's own forces.

(c) DBE as a subcontractor: 100% goal credit for the work of the subcontract performed by the DBE's own forces, including the cost of materials and supplies. Work that a DBE subcontractor in turn subcontracts to a non-DBE firm does not count toward the DBE goal.

(d) DBE as a trucker: 100% goal credit for trucking participation provided the DBE is responsible for the management and supervision of the entire trucking operation for which it is responsible. At least one truck owned, operated, licensed and insured by the DBE must be used on the contact. Credit will be given for the full value of all such DBE trucks operated using DBE employed drivers. Goal credit will be limited to the value of the reasonable fee or commission received by the DBE if trucks are leased from a non-DBE company.

(e) DBE as a material supplier:

(1) 60% goal credit for the cost of the materials or supplies purchased from a DBE regular dealer.

(2) 100% goal credit for the cost of materials or supplies obtained from a DBE manufacturer.

(3) 100% credit for the value of reasonable fees and commissions for the procurement of materials and supplies if not a regular dealer or manufacturer.

GOOD FAITH EFFORT PROCEDURES. If the bidder cannot obtain sufficient DBE commitments to meet the contract goal, the bidder must document in the Utilization Plan the good faith efforts made in

the attempt to meet the goal. This means that the bidder must show that all necessary and reasonable steps were taken to achieve the contract goal. Necessary and reasonable steps are those which could reasonably be expected to obtain sufficient DBE participation. The Department will consider the quality, quantity and intensity of the kinds of efforts that the bidder has made. Mere *pro forma* efforts are not good faith efforts; rather, the bidder is expected to have taken those efforts that would be reasonably expected of a bidder actively and aggressively trying to obtain DBE participation sufficient to meet the contract goal.

(a) The following is a list of types of action that the Department will consider as part of the evaluation of the bidder's good faith efforts to obtain participation. These listed factors are not intended to be a mandatory checklist and are not intended to be exhaustive. Other factors or efforts brought to the attention of the Department may be relevant in appropriate cases, and will be considered by the Department.

(1) Soliciting through all reasonable and available means (e.g. attendance at pre-bid meetings, advertising and/or written notices) the interest of all certified DBE companies that have the capability to perform the work of the contract. The bidder must solicit this interest within sufficient time to allow the DBE companies to respond to the solicitation. The bidder must determine with certainty if the DBE companies are interested by taking appropriate steps to follow up initial solicitations.

(2) Selecting portions of the work to be performed by DBE companies in order to increase the likelihood that the DBE goals will be achieved. This includes, where appropriate, breaking out contract work items into economically feasible units to facilitate DBE participation, even when the prime contractor might otherwise prefer to perform these work items with its own forces.

(3) Providing interested DBE companies with adequate information about the plans, specifications, and requirements of the contract in a timely manner to assist them in responding to a solicitation.

(4) a. Negotiating in good faith with interested DBE companies. It is the bidder's responsibility to make a portion of the work available to DBE subcontractors and suppliers and to select those portions of the work or material needs consistent with the available DBE subcontractors and suppliers, so as to facilitate DBE participation. Evidence of such negotiation includes the names, addresses, and telephone numbers of DBE companies that were considered; a description of the information provided regarding the plans and specifications for the work selected for subcontracting; and evidence as to why additional agreements could not be reached for DBE companies to perform the work.

b. A bidder using good business judgment would consider a number of factors in negotiating with subcontractors, including DBE subcontractors, and would take a firm's price and capabilities as well as contract goals into consideration. However, the fact that there may be some additional costs involved in finding and using DBE companies is not in itself sufficient reason for a bidder's failure to meet the contract DBE goal, as long as such costs are reasonable. Also, the ability or desire of a prime contractor to perform the work of a contract with its own organization does not relieve the bidder of the responsibility to make good faith efforts. Prime contractors are not, however, required to accept higher quotes from DBE companies if the price difference is excessive or unreasonable.

(5) Not rejecting DBE companies as being unqualified without sound reasons based on a thorough investigation of their capabilities. The contractor's standing within its industry, membership in specific groups, organizations, or associations and political or social affiliations (for example union vs. non-union employee status) are not legitimate causes for the rejection or non-solicitation of bids in the contractor's efforts to meet the project goal.

(6) Making efforts to assist interested DBE companies in obtaining bonding, lines of credit, or insurance as required by the recipient or contractor.

(7) Making efforts to assist interested DBE companies in obtaining necessary equipment, supplies, materials, or related assistance or services.

(8) Effectively using the services of available minority/women community organizations; minority/women contractors' groups; local, state, and Federal minority/women business assistance offices; and other organizations as allowed on a case-by-case basis to provide assistance in the recruitment and placement of DBE companies.

(b) If the Department determines that the Contractor has made a good faith effort to secure the work commitment of DBE companies to meet the contract goal, the Department will award the contract provided that it is otherwise eligible for award. If the Department determines that a good faith effort has not been made, the Department will notify the bidder of that preliminary determination by contacting the responsible company official designated in the Utilization Plan. The preliminary determination shall include a statement of reasons why good faith efforts have not been found, and may include additional good faith efforts that the bidder could take. The notification will designate a five (5) working day period during which the bidder shall take additional efforts. The bidder is not limited by a statement of additional efforts, but may take other action beyond any stated additional efforts in order to obtain additional DBE commitments. The bidder shall submit an amended Utilization Plan if additional DBE commitments to meet the contract goal are secured. If additional DBE commitments sufficient to meet the contract goal are not secured, the bidder shall report the final good faith efforts made in the time allotted. All additional efforts taken by the bidder will be considered as part of the bidder's good faith efforts. If the bidder is not able to meet the goal after taking additional efforts, the Department will make a pre-final determination of the good faith efforts of the bidder and will notify the designated responsible company official of the reasons for an adverse determination.

(c) The bidder may request administrative reconsideration of a pre-final determination adverse to the bidder within the five (5) working days after the notification date of the determination by delivering the request to the Department of Transportation, Bureau of Small Business Enterprises, Contract Compliance Section, 2300 South Dirksen Parkway, Room 319, Springfield, Illinois 62764 (Telefax: (217)785-1524). Deposit of the request in the United States mail on or before the fifth business day shall not be deemed delivery. The pre-final determination shall become final if a request is not made and delivered. A request may provide additional written documentation and/or argument concerning the issue of whether an adequate good faith effort was made to meet the contract goal. In addition, the request shall be considered a consent by the bidder to extend the time for award. The request will be forwarded to the Department's Reconsideration Officer. The Reconsideration Officer will extend an opportunity to the bidder to meet in person in order to consider all issues of whether the bidder made a good faith effort to meet the goal. After the review by the Reconsideration Officer, the bidder will be sent a written decision within ten (10) working days after receipt of the request for reconsideration, explaining the basis for finding that the bidder did or did not meet the goal or make adequate good faith efforts to do so. A final decision by the Reconsideration Officer that a good faith effort was made shall approve the Utilization Plan submitted by the bidder and shall clear the contract for award. A final decision that a good faith effort was not made shall render the bid nonresponsive.

CONTRACT COMPLIANCE. Compliance with this Special Provision is an essential part of the contract. The Department is prohibited by federal regulations from crediting the participation of a DBE included in the Utilization Plan toward either the contract goal or the Department's overall goal until the amount to be applied toward the goals has been paid to the DBE. The following administrative procedures and remedies govern the compliance by the Contractor with the contractual obligations established by the

Utilization Plan. After approval of the Plan and award of the contract, the Utilization Plan and individual DBE Participation Statements become part of the contract. If the contractor did not succeed in obtaining enough DBE participation to achieve the advertised contract goal, and the Utilization Plan was approved and contract awarded based upon a determination of good faith, the total dollar value of DBE work calculated in the approved Utilization Plan as a percentage of the awarded contract value shall become the amended contract goal.

(a) No amendment to the Utilization Plan may be made without prior written approval from the Department's Bureau of Small Business Enterprises. All requests for amendment to the Utilization Plan shall be submitted to the Department of Transportation, Bureau of Small Business Enterprises, Contract Compliance Section, 2300 South Dirksen Parkway, Room 319, Springfield, Illinois 62764. Telephone number (217) 785-4611. Telefax number (217) 785-1524.

(b) All work indicated for performance by an approved DBE shall be performed, managed and supervised by the DBE executing the Participation Statement. The Contractor shall not terminate for convenience a DBE listed in the Utilization Plan and then perform the work of the terminated DBE with its own forces, those of an affiliate or those of another subcontractor, whether DBE or not, without first obtaining the written consent of the Bureau of Small Business Enterprises to amend the Utilization Plan. If a DBE listed in the Utilization Plan is terminated for reasons other than convenience, or fails to complete its work on the contract for any reason, the Contractor shall make good faith efforts to find another DBE to substitute for the terminated DBE. The good faith efforts shall be directed at finding another DBE to perform at least the same amount of work under the contract as the DBE that was terminated, but only to the extent needed to meet the contract goal or the amended contract goal. The Contractor shall notify the Bureau of Small Business Enterprises of any termination for reasons other than convenience, and shall obtain approval for inclusion of the substitute DBE in the Utilization Plan. If good faith efforts following a termination of a DBE for cause are not successful, the Contractor shall contact the Bureau and provide a full accounting of the efforts undertaken to obtain substitute DBE participation. The Bureau will evaluate the good faith efforts in light of all circumstances surrounding the performance status of the contract, and determine whether the contract goal should be amended.

(c) The Contractor shall maintain a record of payments for work performed to the DBE participants. The records shall be made available to the Department for inspection upon request. After the performance of the final item of work or delivery of material by a DBE and final payment therefor to the DBE by the Contractor, but not later than thirty (30) calendar days after payment has been made by the Department to the Contractor for such work or material without regard to any retainage withheld by the Department, the Contractor shall submit a DBE Payment Report on Department form SBE 2115 to the District Engineer. If full and final payment has not been made to the DBE, the Report shall indicate whether a disagreement as to the payment required exists between the Contractor and the DBE or if the Contractor believes that the work has not been satisfactorily completed. If the Contractor does not have the full amount of work indicated in the Utilization Plan performed by the DBE companies indicated in the Plan, the Department will deduct from contract payments to the Contractor the amount of the goal not achieved as liquidated and ascertained damages.

(d) The Department reserves the right to withhold payment to the Contractor to enforce the provisions of this Special Provision. Final payment shall not be made on the contract until such time as the Contractor submits sufficient documentation demonstrating achievement of the goal in accordance with this Special Provision or after liquidated damages have been determined and collected.

Payments to Subcontractors

Effective: June 1, 2000
Revised: September 1, 2003

Federal regulations found at 49 CFR §26.29 mandate the Department to establish a contract clause to require Contractors to pay subcontractors for satisfactory performance of their subcontracts no later than 30 days from the receipt of each payment made to the Contractor.

State law addresses the timing of payments to be made to subcontractors. Section 7 of the Prompt Payment Act, 30 ILCS 540/7, generally requires that when a Contractor receives any payment from the Department, the Contractor is required to make corresponding, proportional payments to each subcontractor performing work within 15 calendar days after receipt of the state payment. Section 7 of the State Prompt Payment Act further provides that interest in the amount of 2% per month, in addition to the payment due, shall be paid to any subcontractor by the Contractor if the payment required by the Act is withheld or delayed without reasonable cause. The Act also provides that the time for payment required and the calculation of any interest due applies to transactions between subcontractors and lower-tier subcontractors throughout the contracting chain.

This Special Provision establishes the required federal contract clause, and adopts the 15 calendar day requirement of the Act for purposes of compliance with the federal regulation regarding payments to subcontractors. This contract is subject to the following payment obligations.

As progress payments are made to the Contractor in accordance with Article 109.07 of the Standard Specifications for Road and Bridge Construction, the Contractor shall make a corresponding partial payment within 15 calendar days to each subcontractor in proportion to the work satisfactorily completed by each subcontractor. The proportionate amount of partial payment due to each subcontractor shall be determined by the quantities measured or otherwise determined as eligible for payment by the Department and included in the progress payment to the Contractor. Subcontractors shall be paid in full within 15 calendar days after the subcontractor's work has been satisfactorily completed. The Contractor shall hold no retainage from the subcontractors.

This Special Provision does not create any rights in favor of any subcontractor against the State of Illinois or authorize any cause of action against the State of Illinois on account of any payment, nonpayment, delayed payment or interest claimed by application of the State Prompt Payment Act. The Department will neither determine the reasonableness of any cause for delay of payment nor enforce any claim to payment, including interest. Moreover, the Department will not approve any delay or postponement of the 15 day requirement. State law creates remedies available to any subcontractor or material supplier, regardless of tier, who has not been paid for work properly performed or material furnished. These remedies are a lien against public funds set forth in Section 23(c) of the Mechanics Lien Act, 770 ILCS 60/23(c), and a recovery on the Contractor's payment bond in accordance with the Public Construction Bond Act, 30 ILCS 550.

Additional Bidder Responsibility Evaluation Criteria

Effective: January 1, 2004

It is essential to the needs of the Department that work is completed within the contract time allowed and that inconvenience to the traveling public is held to a minimum. It is also essential to the public safety needs of the Department that open patches be closed according to the time limits set out in the contract. Therefore, this special provision establishes additional responsibility considerations in accordance with 44 Illinois Administrative Code 650.70 of the Rules for Prequalification of Contractors and Issuance of Plans and Proposals. In addition to the prequalification rating established by the rule, the other award criteria advertised in the Invitation for Bids and procurement rules of the Department, the criteria set forth herein shall govern the award of this contract.

Each bidder must submit for evaluation as part of his/her bid, a work plan detailing the Contractor's preparedness and manner of scheduling the work in order to explain how the Contractor will be able to complete work ordered in keeping with the contract lane restrictions and within allowable contract time. As a part of the plan, the Contractor shall provide the names of key response personnel, the manner and means of establishing 24 hour contact with the key response personnel, and the identification of the source of supply and delivery for key materials.

This contract does not allow for extensions of time due to interruptions of work or delivery of materials due to labor actions except for strikes or walkouts extending in duration more than five calendar days. Therefore, the plan shall disclose whether the Contractor has been the subject of any labor action, including but not limited to the actions of informational pickets at or near its work locations in the past three years. A Contractor making such a disclosure, shall incorporate in the work plan a full and complete description of the control, supply, and delivery of key materials. Furthermore, in the case where key materials will be supplied to a Contractor making such a disclosure, by subcontractors or material suppliers not under the direct control of the Contractor, a written certification signed by the Contractor and supplier shall be provided guaranteeing the uninterrupted supply and delivery of said materials to the job-site regardless of the occurrence of any labor action for which an extension of time will not be allowed, including but not limited to informational pickets, and specifying the manner by which the key materials will be delivered. For purposes of this special provision, key materials shall be defined as portland cement concrete.

The plan will be judged as a matter of responsibility based on completeness, thoroughness, and ability to meet the needs of the Department. The Department reserves the right to confirm information contained in the submitted work plan with the Contractor, subcontractors, or material suppliers before the award of this contract. Failure to submit the work plan with the bid shall be cause to declare the submitted bid not responsive. After award, the work plan shall become part of the contract.

80111

Partial Payments

Effective: September 1, 2003

Revise Article 109.07 of the Standard Specifications to read:

"**109.07 Partial Payments.** Partial payments will be made as follows:

(a) Progress Payments. At least once each month, the Engineer will make a written estimate of the amount of work performed in accordance with the contract, and the value thereof at the contract unit prices. The amount of the estimate approved as due for payment will be vouchered by the Department and presented to the State Comptroller for payment. No amount less than $1000.00 will be approved for payment other than the final payment.

The failure to perform any requirement, obligation, or term of the contract by the Contractor shall be reason for withholding any progress payments until the Department determines that compliance has been achieved. Furthermore, progress payments may be reduced by liens filed pursuant to Section 23(c) of the Mechanics Lien Act, 770 ILCS 60/23(c).

(b) Material Allowances. At the discretion of the Department, payment may be made for materials, prior to their use in the work, when satisfactory evidence is presented by the Contractor. Satisfactory evidence includes justification for the allowance (to expedite the work, meet project schedules, regional or national material shortages, etc.), documentation of material and transportation costs, and evidence that such material is properly stored on the project or at a secure location acceptable and accessible to the Department.

Material allowances will be considered only for nonperishable materials when the cost, including transportation, exceeds $10,000 and such materials are not expected to be utilized within 60 days of the request for the allowance. For contracts valued under $500,000, the minimum $10,000 requirement may be met by combining the principal (material) product of no more than two contract items. An exception to this two item limitation may be considered for any contract regardless of value for items in which material (products) are similar except for type and/or size.

Material allowances shall not exceed the value of the contract items in which used and shall not include the cost of installation or related markups. Amounts paid by the Department for material allowances will be deducted from estimates due the Contractor as the material is used. Two-sided copies of the Contractor's cancelled checks for materials and transportation must be furnished to the Department within 60 days of payment of the allowances or the amounts will be reclaimed by the Department."

TRAFFIC CONTROL DEFICIENCY DEDUCTION (BDE)

Effective: April 1, 1992
Revised: January 1, 2003

To ensure a prompt response to incidents involving the integrity of work zone traffic control, the Contractor shall provide a telephone number where a responsible individual can be contacted 24 hours-a-day.

When the Engineer is notified, or determines a traffic control deficiency exists, he/she will notify and direct the Contractor to correct the deficiency within a specified time. The specified time, which begins upon notification to the Contractor, will be from 1/2 hour to 12 hours based upon the urgency of the situation and the nature of the deficiency. The Engineer shall be the sole judge.

The deficiency may be any lack of repair, maintenance or non-compliance with the traffic control plan.

If the Contractor fails to correct the deficiency within the specified time, a daily monetary deduction will be imposed for each calendar day or fraction thereof the deficiency exists. The calendar day(s) will begin with notification to the Contractor and end with the Engineer's acceptance of the correction. The daily monetary deduction will be either $1,000 or 0.05 percent of the awarded contract value, whichever is greater.

In addition, if the Contractor fails to respond, the Engineer may correct the deficiency and the cost thereof will be deducted from monies due or which may become due the Contractor. This corrective action will in no way relieve the Contractor of his/her contractual requirements or responsibilities.

Weight Control Deficiency Deduction

Effective: April 1, 2001
Revised: August 1, 2002

The Contractor shall provide accurate weights of materials delivered to the contract for incorporation into the work (whether temporary or permanent) and for which the basis of payment is by weight. These weights shall be documented on delivery tickets which shall identify the source of the material, type of material, the date and time the material was loaded, the contract number, the net weight, the tare weight when applicable and the identification of the transporting vehicle. For aggregates, the Contractor shall have the driver of the vehicle furnish or establish an acceptable alternative to provide the contract number and a copy of the material order to the source for each load. The source is defined as that facility that produces the final material product that is to be incorporated into the contract pay items.

The Department will conduct random, independent vehicle weight checks for material sources according to the procedures outlined in the Documentation Section Policy Statement of the Department's Construction Manual and hereby incorporated by reference. The results of the independent weight checks shall be applicable to all contracts containing this Special Provision. Should the vehicle weight check for a source result in the net weight of material on the vehicle exceeding the net weight of material shown on the delivery ticket by 0.50% (0.70% for aggregates) or more, the Engineer will document the independent vehicle weight check and immediately furnish a copy of the results to the Contractor. No adjustment in pay quantity will be made. Should the vehicle weight check for a source result in the net weight of material shown on the delivery ticket exceeding the net weight of material on the vehicle by 0.50% (0.70% for aggregates) or more, the Engineer will document the independent vehicle weight check and immediately furnish a copy of the results to the Contractor. The Engineer will adjust the net weight shown on the delivery ticket to the checked delivered net weight as determined by the independent vehicle weight check.

The Engineer will also adjust the method of measurement for all contracts for subsequent deliveries of all materials from the source based on the independent weight check. The net weight of all materials delivered to all contracts containing this Special Provision from this source, for which the basis of payment is by weight, will be adjusted by applying a correction factor "A" as determined by the following formula:

$$A = 1.0 - \left(\frac{B-C}{B}\right); \text{ Where } A \le 1.0; \ \left(\frac{B-C}{C}\right) > 0.50\% \text{ (0.70\% for aggregates)}$$

Where A = Adjustment factor
B = Net weight shown on delivery ticket
C = Net weight determined from independent weight check

The adjustment factor will be applied as follows:

Adjusted Net Weight = A x Delivery Ticket Net Weight

The adjustment factor will be imposed until the cause of the deficient weight is identified and corrected by the Contractor to the satisfaction of the Engineer. If the cause of the deficient weight is not identified and corrected within seven (7) calendar days, the source shall cease delivery of all materials to all contracts containing this Special Provision for which the basis of payment is by weight.

Should the Contractor elect to challenge the results of the independent weight check, the Engineer will continue to document the weight of material for which the adjustment factor would be applied. However, provided the Contractor furnishes the Engineer with written documentation that the source scale has been calibrated within seven (7) calendar days after the date of the independent weight check, adjustments in the weight of material paid for will not be applied unless the scale calibration demonstrates that the source scale was not within the specified Department of Agriculture tolerance.

At the Contractor's option, the vehicle may be weighed on a second independent Department of Agriculture certified scale to verify the accuracy of the scale used for the independent weight check.

Erosion and Sediment Control Deficiency Deduction

Effective: August 1, 2001
Revised: November 1, 2001

When the Engineer is notified or determines an erosion and/or sediment control deficiency(s) exists, he/she will direct the Contractor in writing to correct the deficiency. The Contractor shall then correct the deficiency within 24 hours. The deficiency may be any lack of repair, maintenance, or implementation of erosion and/or sediment control devices included in the contract, or any failure to comply with the conditions of the National Pollutant Discharge Elimination System (NPDES) Storm Water Permit for Construction Site Activities.

If the Contractor fails to correct the deficiency(s) within 24 hours, a daily monetary deduction will be imposed for each calendar day or fraction thereof the deficiency exists. The time period will begin with the initial written notification to the Contractor and end with the Engineer's acceptance of the corrected work. The per calendar day deduction will be either $1000.00 or 0.05 percent of the awarded contract value, whichever is greater.

If the Contractor fails to respond, the Engineer may correct the deficiencies and deduct the cost from monies due or which may become due the Contractor. This corrective action shall in no way relieve the Contractor of his/her contractual requirements or responsibilities.

Inlet Filters

Effective: August 1, 2003

Add the following to Article 280.02 of the Standard Specifications:

"(k) Inlet Filters..... 1081.15(h)"

Add the following paragraph after the first paragraph of Article 280.04(c) of the Standard Specifications:

"When specified, drainage structures shall be protected with inlet filters. Inlet filters shall be installed either directly on the drainage structure or under the grate of the drainage structure resting on the lip of the frame. The fabric bag shall hang down into the drainage structure. Prior to ordering materials, the Contractor shall determine the size and shape of the various drainage structures being protected."

Revise Article 280.07(d) of the Standard Specifications to read:

"(d) Inlet and Pipe Protection. This work will be paid for at the contract unit price per each for INLET AND PIPE PROTECTION.

Protection of drainage structures with inlet filters will be paid for at the contract unit price per each for INLET FILTERS."

Add the following to Article 1081.15 of the Standard Specifications:

"(h) Inlet Filters. An inlet filter shall consist of a steel frame with a two piece geotextile fabric bag attached with a stainless steel band and locking cap that is suspended from the frame. A clean, used bag and a used steel frame in good condition meeting the approval of the Engineer may be substituted for new materials. Materials for the inlet filter assembly shall conform to the following requirements:

(1) Frame Construction. Steel shall conform to Article 1006.04.

Frames designed to fit under a grate shall include an overflow feature that is welded to the frame's ring. The overflow feature shall be designed to allow full flow of water into the structure when the filter bag is full. The dimensions of the frame shall allow the drainage structure grate to fit into the inlet filter assembly frame opening. The assembly frame shall rest on the inside lip of the drainage structure frame for the full variety of existing and proposed drainage structure frames that are present on this contract. The inlet filter assembly frame shall not cause the drainage structure grate to extend higher than 6 mm (1/4 in.) above the drainage structure frame.

(2) Grate Lock. When the inlet is located in a traffic lane, a grate lock shall be used to secure the grate to the frame. The grate lock shall conform to the manufacturer's requirements for materials and installation.

(3) Geotextile Fabric Bag. The sediment bag shall be constructed of an inner filter bag and an outer reinforcement bag.

a. Inner Filter Bag. The inner filter bag shall be constructed of a polypropylene geotextile fabric with a minimum silt and debris capacity of 0.06 cu m (2.0 cu ft). The bag shall conform to the following requirements:

Inner Filter Bag		
Material Property	Test Method	Minimum Avg. Roll Value
Grab Tensile Strength	ASTM D 4632	45 kg (100 lb)
Grab Tensile Elongation	ASTM D 4632	50%
Puncture Strength	ASTM D 4833	29 kg (65 lb)
Trapezoidal Tear	ASTM D 4533	20 kg (45 lb)
UV Resistance	ASTM D 4355	70% at 500 hours
Actual Open Size	ASTM D 1420	212 µm (No. 70 sieve US)
Permittivity	ASTM D 4491	2.0/sec
Water Flow Rate	ASTM D 4491	5900 Lpm/sq m (145 gpm/sq ft)

b. Outer Reinforcement Bag. The outer reinforcement bag shall be constructed of polyester mesh material that conforms to the following requirements:

Outer Reinforcement Bag		
Material Property	Test Method	Value
Content	ASTM D 629	Polyester
Weight	ASTM D 3776	155 g/sq m (4.55 oz/sq yd) ±15%
Whales (holes)	ASTM D 3887	7.5 ± 2 holes/25 mm (1 in.)
Chorses (holes)	ASTM D 3887	15.5 ± 2holes/25 mm (1 in.)
Instronball Burst	ASTM D 3887	830 kPa (120 psi) min.
Thickness	ASTM D 1777	1.0 ± 0.1 mm (0.040 ± 0.005 in.)

(4) Certification. The manufacturer shall furnish a certification with each shipment of inlet filters, stating the amount of product furnished, and that the material complies with these requirements."

Superpave Bituminous Concrete Mixtures

Effective: January 1, 2000
Revised: January 1, 2004

Description. This work shall consist of designing, producing and constructing Superpave bituminous concrete mixtures using Illinois Modified Strategic Highway Research Program (SHRP) Superpave criteria. This work shall be according to Sections 406 and 407 of the Standard Specifications and the special provision, "Quality Control/Quality Assurance of Bituminous Concrete Mixtures", except as follows.

Materials.

(a) Fine Aggregate Blend Requirement. The Contractor may be required to provide FA 20 manufactured sand to meet the design requirements. For mixtures with Ndesign ≥ 90, at least 50 percent of the required fine aggregate fraction shall consist of either stone sand, slag sand, or steel slag sand meeting the FA/FM 20 gradation.

(b) Reclaimed Asphalt Pavement (RAP). If the Contractor is allowed to use more than 15 percent RAP, as specified in the plans, a softer performance-graded binder may be required as determined by the Engineer.

RAP shall meet the requirements of the special provision, "RAP for Use in Bituminous Concrete Mixtures".

RAP will not be permitted in mixtures containing polymer modifiers.

RAP containing steel slag will be permitted for use in top-lift surface mixtures only.

(c) Bituminous Material. The asphalt cement (AC) shall be performance-graded (PG) or polymer modified performance-graded (SBS-PG or SBR-PG) meeting the requirements of Article 1009.05 of the Standard Specifications for the grade specified on the plans.

The following additional guidelines shall be used if a polymer modified asphalt is specified:

(1) The polymer modified asphalt cement shall be shipped, maintained, and stored at the mix plant according to the manufacturer's requirements. Polymer modified asphalt cement shall be placed in an empty tank and shall not be blended with other asphalt cements.

(2) The mixture shall be designed using a mixing temperature of 163 ± 3 °C (325 ± 5 °F) and a gyratory compaction temperature of 152 ± 3 °C (305 ± 5 °F).

(3) Pneumatic-tired rollers will not be allowed unless otherwise specified by the Engineer. A vibratory roller meeting the requirements of Article 406.16 of the Standard Specifications shall be required in the absence of the pneumatic-tired roller.

(4) A manufacturer's representative from the polymer asphalt cement producer shall be present during each polymer mixture start-up and shall be available at all times during production and lay-down of the mix.

Laboratory Equipment.

(a) Superpave Gyratory Compactor. The superpave gyratory compactor (SGC) shall be used for all QC/QA testing.

(b) Ignition Oven. The ignition oven shall be used to determine the AC content. The ignition oven shall also be used to recover aggregates for all required washed gradations.

The Engineer may waive the ignition oven requirement for AC content if the aggregates to be used are known to have ignition AC content calibration factors which exceed 1.5 percent. If the ignition oven requirement is waived, other Department approved methods shall be used to determine the AC content.

Mixture Design. -The Contractor shall submit mix designs, for approval, for each required mixture. Mix designs shall be developed by Level III personnel who have successfully completed the course, "Superpave Mix Design Upgrade". Articles 406.10 and 406.13 of the Standard Specifications shall not apply. The mixtures shall be designed according to the respective Illinois Modified AASHTO references listed below.

AASHTO MP 2	Standard Specification for Superpave Volumetric Mix Design
AASHTO PP 2	Standard Practice for Short and Long Term Aging of Hot Mix Asphalt (HMA)
AASHTO PP 19	Standard Practice for Volumetric Analysis of Compacted Hot Mix Asphalt (HMA)
AASHTO PP 28	Standard Practice for Designing Superpave HMA
AASHTO T 209	Theoretical Maximum Specific Gravity and Density of Bituminous Paving Mixtures
AASHTO T 312	Preparing and Determining the Density of Hot Mix Asphalt (HMA) Specimens by Means of the Superpave Gyratory Compactor
AASHTO T 308	Determining the Asphalt Content of Hot Mix Asphalt (HMA) by the Ignition Method

(a) Mixture Composition. The ingredients of the bituminous mixture shall be combined in such proportions as to produce a mixture conforming to the composition limits by weight. The gradation mixture specified on the plans shall produce a mixture falling within the limits specified in Table 1.

TABLE 1. MIXTURE COMPOSITION (% PASSING)[1/]								
Sieve Size	IL-25.0 mm		IL-19.0 mm		IL-12.5 mm[4/]		IL-9.5 mm[4/]	
	min	max	min	max	min	max	min	max
37.5 mm (1 1/2 in.)		100						
25 mm (1 in.)	90	100		100				
19 mm (3/4 in.)		90	82	100		100		
12.5 mm (1/2 in.)	45	75	50	85	90	100		100
9.5 mm (3/8 in.)						90	90	100
4.75 mm (#4)	24	42[2/]	24	50[2/]	24	65	24	65
2.36 mm (#8)	16	31	16	36	16	48[3/]	16	48[3/]
1.18 mm (#16)	10	22	10	25	10	32	10	32
600 μm (#30)								
300 μm (#50)	4	12	4	12	4	15	4	15
150 μm (#100)	3	9	3	9	3	10	3	10
75 μm (#200)	3	6	3	6	4	6	4	6

1/ Based on percent of total aggregate weight.

2/ The mixture composition shall not exceed 40 percent passing the 4.75 mm (#4) sieve for binder courses with Ndesign ≥ 90.

3/ The mixture composition shall not exceed 40 percent passing the 2.36 mm (#8) sieve for surface courses with Ndesign ≥ 90.

4/ The mixture composition for surface courses shall be according to IL-12.5 mm or IL-9.5 mm, unless otherwise specified by the Engineer.

One of the above gradations shall be used for leveling binder as specified in the plans and according to Article 406.04 of the Standard Specifications.

It is recommended that the selected combined aggregate gradation not pass through the restricted zones specified in Illinois Modified AASHTO MP 2.

(b) Dust/AC Ratio for Superpave. The ratio of material passing the 75 μm (#200) sieve to total asphalt cement shall not exceed 1.0 for mixture design (based on total weight of mixture).

(c) Volumetric Requirements. The target value for the air voids of the hot mix asphalt (HMA) shall be 4.0 percent at the design number of gyrations. The VMA and VFA of the HMA design shall be based on the nominal maximum size of the aggregate in the mix and shall conform to the requirements listed in Table 2.

TABLE 2. VOLUMETRIC REQUIREMENTS					
	Voids in the Mineral Aggregate (VMA), % minimum				Voids Filled with Asphalt (VFA), %
Ndesign	IL-25.0	IL-19.0	IL-12.5	IL-9.5	
50	12.0	13.0	14.0	15	65 - 78
70					65 - 75
90					
105					

(d) Determination of Need for Anti-Stripping Additive. The mixture designer shall determine if an additive is needed in the mix to prevent stripping. The determination will be made on the basis of tests performed according to Illinois Modified T 283 using 4 in. Marshall bricks. To be considered acceptable by the Department as a mixture not susceptible to stripping, the ratio of conditioned to unconditioned split tensile strengths (TSRs) shall be equal to or greater than 0.75. Mixtures, either with or without an additive, with TSRs less than 0.75 will be considered unacceptable.

If it is determined that an additive is required, the additive may be hydrated lime, slaked quicklime, or a liquid additive, at the Contractor's option. The liquid additive shall be selected from the Department's list of approved additives and may be limited to those which have exhibited satisfactory performance in similar mixes.

Dry hydrated lime shall be added at a rate of 1.0 to 1.5 percent by weight of total dry aggregate. Slurry shall be added in such quantity as to provide the required amount of hydrated lime solids by weight of total dry aggregate. The exact rate of application for all anti-stripping additives will be determined by the Department. The method of application shall be according to Article 406.12 of the Standard Specifications.

Personnel. The QC Manager and Level I Technician shall have successfully completed the Department's "Superpave Field Control Course".

Required Plant Tests. Testing shall be conducted to control the production of the bituminous mixture. The Contractor shall use the test methods identified to perform the following mixture tests at a frequency not less than that indicated in Table 3.

TABLE 3. REQUIRED PLANT TESTS for SUPERPAVE			
Parameter		**Frequency of Tests**	**Test Method**
Asphalt Content by Ignition Oven		1 per half day of production	Illinois Modified AASHTO T 308
Air Voids	Bulk Specific Gravity of Gyratory Sample	1 per half day of production for first 2 days and 1 per day thereafter (first sample of the day)	Illinois Modified AASHTO T 312
	Maximum Specific Gravity of Mixture		Illinois Modified AASHTO T 209

During production, the ratio of minus 75 µm (#200) sieve material to total asphalt cement shall be not less than 0.6 nor more than 1.2 and the moisture content of the mixture at discharge from the mixer shall not exceed 0.5 percent. If at any time the ratio of minus 75 µm (#200) material to asphalt or moisture content of the mixture falls outside the stated limits, production of the mix shall cease. The cause shall be determined and corrective action satisfactory to the Engineer shall be initiated prior to resuming production.

During production, mixtures containing an anti-stripping additive will be tested by the Department for stripping according to Illinois Modified T 283. If the mixture fails to meet the TSR criteria for acceptance, no further mixture will be accepted until the Contractor takes such action as is necessary to furnish a mixture meeting the criteria.

Construction Requirements

Lift Thickness.

(a) Binder and Surface Courses. The minimum compacted lift thickness for constructing bituminous concrete binder and surface courses shall be according to Table 4:

TABLE 4 – MINIMUM COMPACTED LIFT THICKNESS	
Mixture	Thickness, mm (in.)
IL-9.5	32 (1 1/4)
IL-12.5	38 (1 1/2)
IL-19.0	57 (2 1/4)
IL-25.0	76 (3)

(b) Leveling Binder. Mixtures used for leveling binder shall be as follows:

TABLE 5 – LEVELING BINDER	
Nominal, Compacted, Leveling Binder Thickness, mm (in.)	Mixture
≤ 32 (1 1/4)	IL-9.5
32 (1 1/4) to 50 (2)	IL 9.5 or IL-12.5

Density requirements shall apply for leveling binder when the nominal, compacted thickness is 32 mm (1 1/4 in.) or greater for IL-9.5 mixtures and 38 mm (1 1/2 in.) or greater for IL-12.5 mixtures.

(c) Full-Depth Pavement. The compacted thickness of the initial lift of binder course shall be 100 mm (4 in.). The compacted thickness of succeeding lifts shall meet the minimums specified in Table 4 but not exceed 100 mm (4 in.).

If a vibratory roller is used for breakdown, the compacted thickness of the binder lifts, excluding the top lift, may be increased to 150 mm (6 in.) provided the required density is obtained.

(d) Bituminous Patching. The minimum compacted lift thickness for constructing bituminous patches shall be according to Table 4.

Control Charts/Limits. Control charts/limits shall be according to QC/QA Class I requirements, except density shall be plotted on the control charts within the following control limits:

TABLE 6. DENSITY CONTROL LIMITS	
Parameter	**Individual Test**
Ndesign ≥ 90	92.0 - 96.0%
Ndesign < 90	93 - 97%

Basis of Payment. On resurfacing projects, this work will be paid for at the contract unit price per metric ton (ton) for BITUMINOUS CONCRETE SURFACE COURSE, SUPERPAVE, of the friction aggregate mixture and Ndesign specified, LEVELING BINDER (HAND METHOD), SUPERPAVE, of the Ndesign specified, LEVELING BINDER (MACHINE METHOD), SUPERPAVE, of the Ndesign specified, and BITUMINOUS CONCRETE BINDER COURSE, SUPERPAVE, of the mixture composition and Ndesign specified.

On resurfacing projects in which polymer modifiers are required, this work will be paid for at the contract unit price per metric ton (ton) for POLYMERIZED BITUMINOUS CONCRETE SURFACE COURSE, SUPERPAVE, of the friction aggregate mixture and Ndesign specified, POLYMERIZED LEVELING BINDER (HAND METHOD), SUPERPAVE, of the Ndesign specified, POLYMERIZED LEVELING BINDER (MACHINE METHOD), SUPERPAVE, of the Ndesign specified, and POLYMERIZED BITUMINOUS CONCRETE BINDER COURSE, SUPERPAVE, of the mixture composition and Ndesign specified.

On full-depth pavement projects, this work will be paid for at the contract unit price per square meter (square yard) for BITUMINOUS CONCRETE PAVEMENT, (FULL-DEPTH), SUPERPAVE, of the thickness specified.

On projects where widening is constructed and the entire pavement is then resurfaced, the binder for the widening will be paid for at the contract unit price per square meter (square yard) for BITUMINOUS CONCRETE BINDER COURSE, SUPERPAVE, of the mixture composition, Ndesign, and thickness specified. The surface and binder used to resurface the entire pavement will be paid for according to the paragraphs above for resurfacing projects.

RAP for Use in Bituminous Concrete Mixtures

Effective: January 1, 2000
Revised: April 1, 2002

Revise Article 1004.07 to read:

"**1004.07 RAP Materials.** RAP is reclaimed asphalt pavement resulting from cold milling or crushing of an existing dense graded hot-mix asphalt pavement. RAP must originate from routes or airfields under federal, state or local agency jurisdiction. The Contractor shall supply documentation that the RAP meets these requirements.

(a) Stockpiles. The Contractor shall construct individual, sealed RAP stockpiles meeting one of the following definitions. No additional RAP will be allowed on top of the pile after the pile has been sealed.

(1) Homogeneous. Homogeneous RAP stockpiles shall consist of RAP from Class I/ Superpave, or equivalent mixtures only and represent the same aggregate quality, but shall be at least C quality or better, the same type of crushed aggregate (either crushed natural aggregate, ACBF slag, or steel slag), similar gradation and similar AC content. If approved by the Engineer, combined single pass surface/binder millings may be considered "homogenous", with a quality rating dictated by the lowest coarse aggregate quality present in the mixture. Homogenous stockpiles shall meet the requirements of Article 1004.07(d). Homogeneous RAP stockpiles not meeting these requirements may be processed (crushing and screening) and retested.

(2) Conglomerate. Conglomerate RAP stockpiles shall consist of RAP from Class I/ Superpave, or equivalent mixtures only. The coarse aggregate in this RAP shall be crushed aggregate only and may represent more than one aggregate type and/or quality but shall be at least C quality or better. This RAP may have an inconsistent gradation and/or asphalt cement content prior to processing. All conglomerate RAP shall be processed prior to testing by crushing to where all RAP shall pass the 16 mm (5/8 in.) or smaller screen. Conglomerate RAP stockpiles shall not contain steel slag or other expansive material as determined by the Department. Conglomerate RAP stockpiles shall meet the requirements of Article 1004.07(d).

(3) Conglomerate "D" Quality (DQ). Conglomerate DQ RAP stockpiles shall consist of RAP containing coarse aggregate (crushed or round) that is at least D quality or better. This RAP may have an inconsistent gradation and/or asphalt content. Conglomerate DQ RAP stockpiles shall not contain steel slag or other expansive material as determined by the Department. Conglomerate DQ RAP shall meet the requirements of Article 1004.07(d).

Reclaimed Superpave Low ESAL IL-9.5L surface mixtures shall only be placed in conglomerate DQ RAP stockpiles due to the potential for rounded aggregate.

(4) Other. RAP stockpiles that do not meet the requirements of the stockpile categories listed above shall be classified as "Other". "Other" RAP stockpiles shall not be used in any of the Department's bituminous mixtures.

(b) Use. The allowable use of a RAP stockpile shall be set by the lowest quality of coarse aggregate in the RAP stockpile. Class I/Superpave surface mixtures are designated as containing Class B quality coarse aggregate only. Superpave Low ESAL IL-19.0L binder and IL-9.5L surface mixtures are designated as Class C quality coarse aggregate only. Class I/Superpave binder mixtures, bituminous base course mixtures, and bituminous base course widening mixtures are designated as containing Class C quality coarse aggregate only. Bituminous stabilized subbase and BAM shoulders are designated as containing Class D quality coarse aggregate only. Any mixture not listed above shall have the designated quality determined by the Department.

RAP containing steel slag or other expansive material, as determined by the Department, shall be homogeneous and will be approved for use in Class I/Superpave (including Low ESAL) surface mixtures only. RAP stockpiles for use in Class I/Superpave mixtures (including Low ESAL), base course, base course widening and Class B mixtures shall be either homogeneous or conglomerate RAP stockpiles except conglomerate RAP stockpiles shall not be used in Superpave surface mixture Ndesign 50 or greater. RAP for use in bituminous aggregate mixtures (BAM) shoulders and BAM stabilized subbase shall be from homogeneous, conglomerate, or conglomerate DQ stockpiles.

Additionally, RAP used in Class I/Superpave surface mixtures shall originate from milled or crushed mixtures only, in which the coarse aggregate is of Class B quality or better. RAP stockpiles for use in Class I/Superpave (including Low ESAL) binder mixes as well as base course, base course widening and Class B mixtures shall originate from milled or processed surface mixture, binder mixture, or a combination of both mixtures uniformly blended to the satisfaction of the Engineer, in which the coarse aggregate is of Class C quality or better.

(c) Contaminants. RAP containing contaminants, such as earth, brick, sand, concrete, sheet asphalt, bituminous surface treatment (i.e. chip seal), pavement fabric, etc., will be unacceptable unless the contaminants are removed to the satisfaction of the Engineer. Sheet asphalt shall be stockpiled separately.

(d) Testing. All RAP shall be sampled and tested either during or after stockpiling.

For testing during stockpiling, washed extraction samples shall be run at the minimum frequency of one sample per 450 metric tons (500 tons) for the first 1800 metric tons (2,000 tons) and one sample per 1800 metric tons (2,000 tons) thereafter. A minimum of five tests shall be required for stockpiles less than 3600 metric tons (4,000 tons).

For testing existing stockpiles, the Contractor shall submit a plan for approval to the District proposing a satisfactory method of sampling and testing the RAP pile either in-situ or by restockpiling. The sampling plan shall meet the minimum frequency required above and detail the procedure used to extract representative samples throughout the pile for testing.

Before extraction, each field sample shall be split to test sample size. One of the two test samples from the final split shall be labeled and stored for Department use. The Contractor shall extract the other test sample according to Department procedure. The Engineer reserves the right to test any sample (split or Department-taken) to verify Contractor test results.

All of the extraction results shall be compiled and averaged for asphalt content and gradation. Individual extraction test results, when compared to the averages, will be accepted if within the tolerances listed below.

Parameter	Homogeneous / Conglomerate	Conglomerate "D" Quality
25 mm (1 in.)		± 5%
12.5 mm (1/2 in.)	± 8%	± 15%
4.75 mm (No. 4)	± 6%	± 13%
2.36 mm (No. 8)	± 5%	
1.18 mm (No. 16)		± 15%
600 µm (No. 30)	± 5%	
75 µm (No. 200)	± 2.0%	± 4.0%
AC	± 0.4%	± 0.5%

If more than 20 percent of the individual sieves are out of the gradation tolerances, or if more than 20 percent of the asphalt content test results fall outside the appropriate tolerances, the RAP will not be allowed to be used in the Department's bituminous concrete mixtures unless the RAP representing the failing tests is removed from the stockpile to the satisfaction of the Engineer. All test data and acceptance ranges shall be sent to the District for evaluation.

With the approval of the Engineer, the ignition oven may be substituted for extractions according to the Illinois Test Procedure, "Calibration of the Ignition Oven for the Purpose of Characterizing Reclaimed Asphalt Pavement (RAP)".

(e) Designs. At the Contractor's option, bituminous concrete mixtures may be constructed utilizing RAP material meeting the above detailed requirements. The amount of RAP included in the mixture shall not exceed the percentages specified in the plans.

RAP designs shall be submitted for volumetric verification. If additional RAP stockpiles are tested and found that no more than 20 percent of the results, as defined under "Testing" herein, are outside of the control tolerances set for the original RAP stockpile and design, and meets all of the requirements herein, the additional RAP stockpiles may be used in the original mix design at the percent previously verified.

(f) Production. The coarse aggregate in all RAP used shall be equal to or less than the nominal maximum size requirement for the bituminous mixture being produced.

To remove or reduce agglomerated material, a scalping screen, crushing unit or comparable sizing device approved by the Engineer shall be used in the RAP feed system to remove or reduce oversized material. If material passing the sizing device adversely affects the mix production or quality of the mix, the sizing device shall be set at a size specified by the Engineer.

If the RAP control tolerances or QC/QA test results require corrective action, the Contractor shall cease production of the mixture containing RAP and either switch to the virgin aggregate design or submit a new RAP design.

Coarse Aggregate for Trench Backfill, Backfill and Bedding

Effective: April 1, 2001
Revised: November 1, 2003

Revise Article 208.02 of the Standard Specifications to read:

"**208.02 Materials.** Materials shall be according to the following Articles of Section 1000 – Materials:

(a) Fine Aggregate (Note 1) 1003.04
(b) Coarse Aggregate (Note 2) 1004.06

Note 1. The fine aggregate shall be moist to the satisfaction of the Engineer.

Note 2. The coarse aggregate shall be wet to the satisfaction of the Engineer."

Revise the first sentence of the second paragraph of subparagraph (b) in Article 208.03 of the Standard Specifications to read:

"Any material meeting the requirements of Articles 1003.04 or 1004.06 which has been excavated from the trenches shall be used for backfilling the trenches."

Add the following to the end of Article 542.02 of the Standard Specifications:

"(bb) Fine Aggregate (Note 1) 1003.04
(cc) Coarse Aggregate (Note 2) 1004.06

Note 1. The fine aggregate shall be moist to the satisfaction of the Engineer.

Note 2. The coarse aggregate shall be wet to the satisfaction of the Engineer."

Revise the first and second sentences of the second paragraph of subparagraph (a) of Article 542.04 of the Standard Specifications to read:

"The unstable and unsuitable material shall be removed to a depth determined by the Engineer and for a width of one diameter (or equivalent diameter) of the pipe on each side of the pipe culvert, and replaced with aggregate. Rock shall be removed to an elevation 300 mm (1 ft) lower than the bottom of the pipe or to a depth equal to 40 mm/m (1/2 in./ft) of ultimate fill height over the top of the pipe culvert, whichever is the greater depth, and for a width as specified in (b) below, and replaced with aggregate."

Revise the second paragraph of subparagraph (c) of Article 542.04 of the Standard Specifications to read:

"Well compacted aggregate, at least 100 mm (4 in.) in depth below the pipe culvert, shall be placed the entire width of the trench and for the length of the pipe culvert, except well compacted impervious material shall be used for the outer 1 m (3 ft) at each end of the pipe.

When the trench has been widened by the removal and replacement of unstable or unsuitable material, the foundation material shall be placed for a width not less than the above specified widths on each side of the pipe. The aggregate and impervious material shall be approved by the Engineer and shall be compacted to the Engineer's satisfaction by mechanical means."

Revise subparagraph (e) of Article 542.04 of the Standard Specifications to read:

"(e) Backfilling. As soon as the condition of the pipe culvert will permit, the entire width of the trench shall be backfilled with aggregate to a height of at least the elevation of the center of the pipe. The aggregate shall be placed longitudinally along the pipe culvert, except at the outer 1 m (3 ft) at each end of the culvert which shall be backfilled with impervious material. The elevation of the backfill material on each side of the pipe shall be the same. The space under the pipe shall be completely filled. The aggregate and impervious material shall be placed in 200 mm (8 in.) layers, loose measurement. When using PVC, PE, or corrugated metal pipe, the aggregate shall be continued to a height of at least 300 mm (1 ft) above the top of the pipe and compacted to a minimum of 85 percent of standard lab density by mechanical means. When reinforced concrete pipes are used and the trench is within 600 mm (2 ft) of the pavement structure, the backfill shall be compacted to a minimum of 85 percent of standard lab density by mechanical means.

When using PVC, PE, or corrugated metal pipe a minimum of 300 mm (1 ft) of cover from the top of the pipe to the top of the subgrade will be required.

The installed pipe and its embedment shall not be disturbed when using movable trench boxes and shields, sheet pile, or other trench protection.

The remainder of the trench shall be backfilled with select material, from excavation or borrow, free from large or frozen lumps, clods or rock, meeting the approval of the Engineer. The material shall be placed in layers not exceeding 200 mm (8 in.) in depth, loose measurement and compacted to 95 percent of the standard laboratory density. Compaction shall be obtained by use of mechanical tampers or with approved vibratory compactors. Before compacting, each layer shall be wetted or dried to bring the moisture content within the limits of 80 to 110 percent of optimum moisture content determined according to AASHTO T 99 (Method C). All backfill material shall be deposited in the trench or excavation in such a manner as not to damage the culvert. The filling of the trench shall be carried on simultaneously on both sides of the pipe. The Contractor may, at his/her expense, backfill the entire trench with aggregate in lieu of select material. The aggregate shall be compacted to the satisfaction of the Engineer by mechanical means.

The backfill material for all trenches and excavations made in the subgrade of the proposed improvement, and for all trenches outside of the subgrade where the inner edge of the trench is within 600 mm (2 ft) of the edge of the proposed pavement, curb, gutter, curb and gutter, stabilized shoulder, or sidewalk shall be according to Section 208. The trench backfill material shall be compacted to a minimum of 85 percent of standard lab density by mechanical means.

The Contractor may, at his/her expense, backfill the entire trench with controlled low strength material meeting the approval of the Engineer.

When the trench has been widened for the removal and replacement of unstable or unsuitable material, the backfilling with aggregate and impervious material, will be required for a width of at least the specified widths on each side of the pipe. The remaining width of each layer may be

backfilled with select material. Each 200 mm (8 in.) layer for the entire trench width shall be completed before beginning the placement of the next layer."

Revise subparagraph (b) of Article 542.05 of the Standard Specifications to read:

"(b) Embankment. Embankment extending to an elevation of 300 mm (1 ft) over the top of the pipe shall be constructed according to Article 542.04(f), except the material up to the elevation of the center of the pipe and extending to a width of at least 450 mm (18 in.) on each side of the pipe, exclusive of the outer 1 m (3 ft) at each end of the pipe, shall consist of aggregate. At the outer 1 m (3 ft) at each end of the culvert, impervious material shall be used."

Add the following paragraph after the first paragraph of Article 542.10 of the Standard Specifications:

"Trench backfill will be measured for payment according to Article 208.03."

Add the following paragraph after the third paragraph of Article 542.11 of the Standard Specifications:

"Trench backfill will be paid for according to Article 208.04."

Add the following to of Article 550.02 of the Standard Specifications:

"(m) Fine Aggregate (Note 2) 1003.04
(n) Coarse Aggregate (Note 3) 1004.06

Note 2. The fine aggregate shall be moist to the satisfaction of the Engineer.

Note 3. The coarse aggregate shall be wet to the satisfaction of the Engineer."

Revise the first two sentences of the third paragraph of Article 550.04 of the Standard Specifications to read:

"Well compacted, aggregate bedding material at least 100 mm (4 in.) in depth below the pipe, shall be placed for the entire width of the trench and length of the pipe. The aggregate shall be compacted to the satisfaction of the Engineer by mechanical means."

Revise Article 550.07 of the Standard Specifications to read:

"550.07 Backfilling. As soon as the condition of the pipe will permit, the entire width of the trench shall be backfilled with aggregate to a height of at least the elevation of the center of the pipe. The aggregate shall be placed longitudinally along the pipe. The elevation of the backfill material on each side of the pipe shall be the same. The space under the pipe shall be completely filled. The aggregate backfill material shall be placed in 200 mm (8 in.) layers, loose measurement and compacted to the satisfaction of the Engineer by mechanical means. When using PVC pipe, the aggregate shall be continued to a height of at least 300 mm (12 in.) above the top of the pipe.

The installed pipe and its embedment shall not be disturbed when using movable trench boxes and shields, sheet pile, or other trench protection.

The remainder of the trench and excavation shall be backfilled to the natural line or finished surface as rapidly as the condition of the sewer will permit. The backfill material shall consist of suitable excavated material from the trench or of trench backfill as herein specified. All backfill material shall be deposited in the trench or excavation in such a manner as not to damage the sewer and shall be compacted to the satisfaction of the Engineer by mechanical means. The filling of the trench shall be carried on simultaneously on both sides of the pipe.

The backfill material for trenches and excavation made in the subgrade of the proposed improvement, and for all trenches outside of the subgrade where the inner edge of the trench is within 600 mm (2 ft) of the edge of the proposed pavement, curb, gutter, curb and gutter, stabilized shoulder or sidewalk shall be according to Section 208. The backfill material shall be compacted to 85 percent of standard lab density by mechanical means.

All backfill material up to a height of 300 mm (1 ft) above the pipe shall be deposited in uniform layers not exceeding 200 mm (8 in.) thick, loose measurement. The material in each layer shall be compacted to the satisfaction of the Engineer by mechanical means. The backfilling above this height shall be done according to Method 1, 2 or 3 as described below, with the following exceptions.

When trench backfill or excavated material meeting the requirements of Section 208 is required above the first 300 mm (1 ft) of the pipe, the layers shall not exceed 200 mm (8 in.). Gradations CA6 or CA10 shall not be used with Method 2 or Method 3.

Method 1. The material shall be deposited in uniform layers not exceeding 300 mm (1 ft) thick, loose measurement, and each layer shall be compacted to the satisfaction of the Engineer by mechanical means.

Method 2. The material shall be deposited in uniform layers not exceeding 300 mm (1 ft) thick, loose measurement, and each layer shall be either inundated or deposited in water.

Method 3. The trench shall be backfilled with loose material, and settlement secured by introducing water through holes jetted into the backfill to a point approximately 600 mm (2 ft) above the top of the pipe. The holes shall be spaced as directed by the Engineer but shall be no farther than 2 m (6 ft) apart.

The water shall be injected at a pressure just sufficient to sink the holes at a moderate rate of speed. The pressure shall be such that the water will not cut cavities in the backfill material nor overflow the surface. If water does overflow the surface, it shall be drained into the jetted holes by means of shallow trenches.

Water shall be injected as long as it will be absorbed by the backfill material and until samples taken from test holes in the trench show a satisfactory moisture content. The Contractor shall bore the test holes not more than 15 m (50 ft) apart and at such other locations in the trench designated by the Engineer. As soon as the watersoaking has been completed, all holes shall be filled with soil and compacted by ramming with a tool approved by the Engineer.

Backfill material which has been watersoaked shall be allowed to settle and dry for at least 10 days before any surface course or pavement is constructed on it. The length of time may be altered, if deemed desirable, by the Engineer. Where the inner edge of the trench is within 600 mm (2 ft) of the

edge of the proposed pavement, curb, gutter, curb and gutter, stabilized shoulder or sidewalk, the provisions of this paragraph shall also apply.

At the end of the settling and drying period, the crusted top of the backfill material shall be scarified and, if necessary, sufficient backfill material added, as specified in Method 1, to complete the backfilling operations.

The method used for backfilling and compacting the backfill material shall be the choice of the Contractor. If the method used does not produce results satisfactory to the Engineer, the Contractor will be required to alter or change the method being used so the resultant backfill will be satisfactory to the Engineer. Should the Contractor be required to alter or change the method being used, no additional compensation will be allowed for altering or changing the method.

The Contractor may, at his/her expense, backfill the entire trench with controlled low strength material meeting the approval of the Engineer.

When sheeting and bracing have been used, sufficient bracing shall be left across the trench as the backfilling progresses to hold the sides firmly in place without caving or settlement. This bracing shall be removed as soon as practicable. Any depressions which may develop within the area involved in the construction operation due to settlement of the backfilling material shall be filled in a manner approved by the Engineer.

When the Contractor constructs the trench with sloped or benched sides according to Article 550.04, backfilling for the full width of the excavation shall be as specified, except no additional compensation will be allowed for trench backfill material required outside the vertical limits of the specified trench width.

Whenever excavation is made for installing sewer pipe across earth shoulders or private property, the topsoil disturbed by excavation operations shall be replaced as nearly as possible in its original position, and the whole area involved in the construction operations shall be left in a neat and presentable condition.

When using any PVC pipe, the pipe shall be backfilled with aggregate to 300 mm (1 ft) over the top of the pipe and compacted to a minimum of 85 percent of standard lab density by mechanical means.

When reinforced concrete pipes are used and the trench is within 600 mm (2 ft) of the pavement structure, the backfill shall be compacted to a minimum of 85 percent of standard lab density by mechanical means.

Deflection Testing for Storm Sewers. All PVC storm sewers will be tested for deflection not less than 30 days after the pipe is installed and the backfill compacted.

For PVC storm sewers with diameters 600 mm (24 in.) or smaller, a mandrel drag shall be used for deflection testing. For PVC storm sewers with diameters over 600 mm (24 in.), deflection measurements other than by a mandrel drag shall be used.

Where the mandrel is used, the mandrel shall be furnished by the Contractor and pulled by hand through the pipeline with a suitable rope or cable connected to each end. Winching or other means of forcing the deflection gauge through the pipeline will not be allowed.

The mandrel shall be of a shape similar to that of a true circle enabling the gauge to pass through a satisfactory pipeline with little or no resistance. The mandrel shall be of a design to prevent it from

tipping from side to side and to prevent debris build-up from occurring between the channels of the adjacent fins or legs during operation. Each end of the core of the mandrel shall have fasteners to which the pulling cables can be attached. The mandrel shall have 9, various sized fins or legs of appropriate dimension for various diameter pipes. Each fin or leg shall have a permanent marking that states its designated pipe size and percent of deflection allowable.

The outside diameter of the mandrel shall be 95 percent of the base inside diameter, where the base inside diameter is:

For all PVC pipe (as defined using ASTM D 3034 methodology):

If the pipe is found to have a deflection greater than specified, that pipe section shall be removed, replaced, and retested."

Revise subparagraph (c) of Article 1003.04 of the Standard Specifications to read:

"(c) Gradation. The fine aggregate gradation shall be as follows:

Backfill, bedding and trench backfill for pipe culverts and storm sewers ..... FA 1, FA 2, FA 6, or FA 21
Porous granular embankment and backfill, french drains, and sand backfill for underdrains ..... FA 1, FA 2, or FA20 (Note 1)

Note 1: For FA 1, FA 2, and FA 20 the percent passing the 75 μm (No. 200) sieve shall be 2 ± 2."

Revise the title of Article 1004.06 of the Standard Specifications to read:

"Coarse Aggregate for Blotter, Embankment, Backfill, Trench Backfill, French Drains, and Bedding."

Add the following to the end of subparagraph (c) of Article 1004.06 of the Standard Specifications:

"Backfill, bedding, and trench backfill for pipe culverts and storm sewers ..... CA 6, CA 10, and CA 18"

Curb Ramps for Sidewalk

Effective: January 1, 2004

Description. This work shall consist of constructing sidewalk curb ramps with detectable warnings in compliance with the Americans with Disabilities Act, Accessibility Guidelines (ADAAG). Work shall be according to Section 424 of the Standard Specifications except as modified herein.

The detectable warnings shall consist of an area of truncated domes that provide both visual and tactile cues to pedestrians who are about to enter into traffic. The warning area shall begin 150 mm (6 in.) from the back of the curb and continue 600 mm (2 ft) in the direction of pedestrian travel for the entire width of the walking surface.

The detectable warnings shall also present a contrast in color from the adjacent sidewalk. This shall be accomplished by constructing the warning area, plus the 150 mm (6 in.) area between the warning area and the back of curb, out of concrete that is integrally colored red. However if the sidewalk is brick or of some dark color, the contrast requirement shall be achieved with normal (grey), Class SI concrete.

Materials. Materials for the detectable warning area of the curb ramps shall meet the following requirements.

a) Integrally Colored Concrete. Integrally colored concrete shall be according to Section 1020 of the Standard Specification for Class SI concrete except as follows.

Article 1020.04	The allowable water/cement ratio range shall be 0.40 minimum to 0.44 maximum.
Article 1020.04	The allowable slump range shall be 75 mm (3 in.) minimum to 125 mm (5 in.) maximum.
Article 1020.04	The allowable coarse aggregate gradations shall be CA 11, CA 13, CA 14, and CA 16.
Article 1020.05(b)	A calcium chloride accelerating admixture shall not be used.
Article 1020.05(b)	The cement factor shall not be reduced if a water-reducing or high range water-reducing admixture is used.
Article 1020.05(c)	Fly ash shall not be used.
Article 1020.05(k)	Ground granulated blast-furnace slag shall not be used.
Article 1020.11	Pigment for integrally colored concrete shall be added to the concrete and mixed per the Manufacturer's recommendation.
Article 1020.13	The curing method shall be Type I membrane curing.
Article 1020.13.	The protection method shall be according to Article 1020.13(e)(1) and the protection period shall be 96 hours. No material, including

the insulating material, shall be placed in direct contact with the concrete surface.

(b) Pigment for Integrally Colored Concrete. The pigment shall meet the requirements of ASTM C 979, match color number 30166 of Federal Standard 595, and be on the Department's Approved List of Pigments for Integrally Colored Concrete.

(c) Release Agent for Concrete Stamping Tools. The release agent shall be according to the stamping tool manufacturer's recommendations and the following: it shall be a clear liquid that will evaporate, it shall not harm the concrete, and it shall allow the application of Type I membrane curing.

Equipment. Equipment for the detectable warning area of the curb ramps shall meet the following requirements.

(a) Concrete Stamps. Sufficient numbers and sizes of stamps shall be furnished to cover the various widths of the curb ramps. The stamps shall have an air opening at the top of each truncated dome recess; and shall be rigid enough to evenly distribute the force exerted during tamping.

(b) Tamper. The tamper shall be according to the concrete stamp manufacturer's recommendations.

CONSTRUCTION REQUIREMENTS

Stamping. The concrete shall be placed and finished according to Article 424.06 except the area to be stamped shall not be brushed. When the bleed water has been absorbed, stamping shall begin. The entire width of the curb ramp shall be stamped at the same time. A single stamp or a combination of stamps may be used.

Prior to placing the stamp on the concrete, the stamp shall be coated with the release agent. When recommended by the manufacturer, the release agent shall also be applied to the concrete surface. Once the stamp has been placed on the ramp, it shall remain down until the stamping is complete.

The entire area of the stamp shall be tamped with a short, slow, repetitive action such that the concrete is caused to move up and into the dome recesses of the stamp. Tamping shall continue until mortar has come through the air openings in the stamp. Stepping or walking on the stamp will not be allowed. The base elevation of the domes shall be even with the adjacent sidewalk surface; the stamp shall not be forced down into the concrete.

When stamping is complete, the stamp shall be removed and the concrete cured.

Upon completion of curing, or after cold weather protection if required, the protruding mortar tip on the top of each dome shall be removed and the dome rubbed or ground smooth.

Portland Cement Concrete Patching

Effective: January 1, 2001
Revised: January 1, 2004

Revise Note 1 of Article 442.02 of the Standard Specifications, to read:

"Note 1. When patching ramp pavements and two lane pavements with two way traffic, Class PP-2, PP-3, or PP-4 concrete shall be used for Class A, Class B and Class C patching. For all other pavements, Class PP-1, PP-2, PP-3, or PP-4 concrete shall be used, at the Contractor's option, for Class A, Class B and Class C patching."

Delete Note 2 of Article 442.02 of the Standard Specifications.

Add the following to Article 442.02 of the Standard Specifications:

"(l) Calcium Chloride (Note 5) 1013.01

Note 5. The calcium chloride accelerator, when permitted by the Department, shall be Type L (Liquid) with a minimum of 32.0 percent by mass (weight) of calcium chloride."

Revise the first paragraph of Article 442.06(e) of the Standard Specifications to read:

"(e) Concrete Placement. For Class A, Class B and Class C Patches, concrete shall be placed according to Article 420.07 and governed by the limitations set forth in Article 1020.14, except that the maximum temperature of the mixed concrete immediately before placing shall be 35 °C (96 °F), the required use of an approved retarding admixture when the plastic concrete reaches 30 °C (85 °F) shall not apply."

Revise the first paragraph of Article 442.06(h) of the Standard Specifications to read:

"(h) Curing and Protection. In addition to Article 1020.13, when the air temperature is less than 13 °C (55 °F), the Contractor shall cover the patch with minimum R12 insulation until opening strength is reached. Insulation is optional when the air temperature is 13 °C - 35 °C (55 °F - 96 °F). Insulation shall not be placed when the air temperature is greater than 35 °C (96 °F)."

Revise the second paragraph of Article 701.05(e)(1)d.1. of the Standard Specifications to read:

"No open holes, broken pavement, or partially filled holes shall remain overnight for bituminous patching or when the Department specifies only Class PP-2, PP-3, or PP-4 concrete be used. The only exception is conditions beyond the control of the Contractor."

Revise Article 701.05(e)(2)b. of the Standard Specifications to read:

"b. Strength Tests. For patches constructed with Class PP-1, PP-2, PP-3, or PP-4 concrete, the pavement may be opened to traffic when test specimens cured with the patches have obtained a minimum flexural strength of 4150 kPa (600 psi) or a minimum compressive strength of 22,100 kPa (3200 psi) according to Article 1020.09.

For patches constructed with Class PP-2, PP-3, or PP-4 concrete which can obtain a minimum flexural strength of 4150 kPa (600 psi) or a minimum of compressive strength of 22,100 kPa (3200 psi) in 16 hours, the pavement may be opened to traffic at a lower

opening strength. The specimens cured with the patches shall have obtained a minimum flexural strength of 2050 kPa (300 psi) or a minimum compressive strength of 11,000 kPa (1600 psi) according to Article 1020.09, to permit opening pavement to traffic.

With the approval of the Engineer, concrete strength may be determined according to AASHTO T 276. The strength-maturity relationship shall be developed from concrete which has an air content near the upper specification limit. The strength-maturity relationship shall be re-established if the mix design or materials are changed."

Revise Article 701.05(e)(2)c. of the Standard Specifications to read:

"c. Construction Operations. For Class PP-2, PP-3, or PP-4 concrete used on ramp pavements and two lane pavements with two way traffic, or when the Department specifies only Class PP-2, PP-3, or PP-4 concrete be used for other pavements, Contractor construction operations shall be performed in a manner which allows the patches to be opened the same day and before nightfall. If patches are not opened before nightfall, the additional traffic control shall be at the Contractor's expense. Any time patches cannot be opened before nightfall, the Contractor shall change subsequent construction operations or the mix design. The changes shall be at no additional cost to the Department."

Revise Table 1 of Article 1020.04 of the Standard Specifications by replacing Class PP concrete with the following:

"TABLE 1. CLASSES OF PORTLAND CEMENT CONCRETE AND MIX DESIGN CRITERIA

Class of Concrete	Use	Specification Section Reference	Cement Factor kg/cu m (cwt/cu yd)	Max. Water/Cement Ratio kg/kg (lb/lb)
PP-1	PCC Pavement Patching Bridge Deck Patching	442	Type I Cement 385 to 445 (6.50 to 7.50) Type III Cement 365 to 425 (6.20 to 7.20)	0.44
PP-2	PCC Pavement Patching Bridge Deck Patching	442	Type I Cement 435 (7.35)	0.38
PP-3	PCC Pavement Patching Bridge Deck Patching	442	Type III Cement 435 (7.35)	0.35
PP-4	PCC Pavement Patching Bridge Deck Patching	442	Rapid Hardening Cement 355 to 370 (6.00 to 6.25)	0.50

For PP-1, the Contractor has the option to replace the Type I Cement with Class C fly ash or ground granulated blast-furnace slag. The amount of cement replaced shall not exceed 15 percent by mass (weight), at a minimum replacement ratio of 1.5:1.

For PP-2, the Contractor has the option to replace the Type I cement with ground granulated blast-furnace slag. The amount of cement replaced shall not exceed 30 percent by mass (weight), at a minimum replacement ratio of 1:1.

For PP-3, in addition to the cement, 60 kg/cu m (100 lb/cu yd) of ground granulated blast-furnace slag and 30 kg/cu m (50 lb/cu yd) of microsilica are required. For an air temperature greater than 30 °C (85 °F), the Contractor has the option to replace the Type III cement with Type I cement.

For PP-4, the cement shall be from the Department's "Approved List of Packaged, Dry, Rapid Hardening Cementitious Materials for Concrete Repairs".

TABLE 1. (CONT'D) CLASSES OF PORTLAND CEMENT CONCRETE AND MIX DESIGN CRITERIA

Class of Concrete	Slump, mm (in.)	Mix Design Compressive Strength, kPa (psi)	Mix Design Flexural Strength, kPa (psi)	Air Content, %	Coarse Aggregate Gradations Permitted
		Hours	Hours		
		48	48		
PP – 1	100 (4) Max	22,100 (3200)	4150 (600)	4.0 – 7.0	CA-7, CA-11, CA-13, CA14, or CA-16
PP – 2	150 (6) Max	22,100 (3200)	4150 (600)	4.0 – 6.0	CA-7, CA-11, CA-13, CA14, or CA-16
PP – 3	100 (4) Max	22,100 (3200)	4150 (600)	4.0 – 6.0	CA-7, CA-11, CA-13, CA14, or CA-16
PP – 4	150 (6) Max	22,100 (3200)	4150 (600)	4.0 – 6.0	CA-7, CA-11, CA-13, CA14, or CA-16

For PP-1, PP-2, PP-3 or PP-4; only CA-13, CA-14, or CA-16 may be used for bridge deck patching. In addition, the mix design strength at 48 hours shall be increased to 27,500 kPa (4,000 psi) compressive or 4,650 kPa (675 psi) flexural for bridge deck patching.

For PP-1, the slump may be increased to 150 mm (6 in.) Max if a high range water-reducing admixture is used."

Delete Article 1020.05(g) of the Standard Specifications.

Precast Concrete

Effective: July 1, 1999
Revised: January 1, 2002

Description. This special provision identifies non-prestressed, precast concrete products which shall be produced according to the Department's current, "Quality Control/Quality Assurance Program for Precast Concrete Products".

Products. The list of products is as follows:

Product Class	Precast Item
Box Culvert	Precast Concrete Box Culverts
Pipe	Reinforced Concrete Culvert, Storm Drain and Sewer Pipe
	Concrete Sewer, Storm Drain and Culvert Pipe
	Reinforced Concrete Elliptical Culvert, Storm Drain and Sewer Pipe
	Concrete Drain Tile
	Reinforced Concrete Arch Culvert, Storm Drain and Sewer Pipe
	Concrete Headwall for Pipe Drains
	Precast Reinforced Concrete Flared End Sections and Elliptical Flared End Sections
	Precast Reinforced Concrete Pipe Elbows, Tees and Collars
Structure	Precast Concrete Members
Block/Brick	Erosion Control: Concrete Block Riprap, Block Revetment Mat, and Articulated Block Mat
	Concrete Building Brick
	Concrete Masonry Units
Drainage Structure	Precast Reinforced Concrete Catch Basins, Manholes, Inlets, Miscellaneous Structures, Valve Vaults and Flat Slab Tops/Bottoms
Barrier	Concrete Barrier
	Temporary Concrete Barrier
Miscellaneous	Right of Way, Drainage, Section and Permanent Survey Markers, Bumper Blocks, Junction Boxes, and Handholes

For precast concrete products which are constructed according to AASHTO M 86, M 170, M 178, M 199, M 206, M 207, M 259, or M 273; portland or blended hydraulic cement shall be according to Article 1001.01 of the Standard Specifications, except the pozzolan constituent in the Type IP or Type I (PM) cement shall be fly ash. In addition, the minimum or maximum combination of a portland cement and a cementitious material shall be according to the AASHTO M specification. The cementitious material shall be according to Articles 1010.01, 1010.03, 1014.01, 1014.02, 1015.01, 1015.02, 1016.01 and 1016.02.

Acceptance. Products which have been lot or piece inspected and approved by the Department prior to July 1, 1999, will be accepted for use on this contract. Products produced on or after July 1, 1999, will be accepted only if produced according to the Department's current "Quality Control/Quality Assurance Program for Precast Concrete Products".

Flagger Vests

Effective: April 1, 2003

Revise the first sentence of Article 701.04(c)(1) of the Standard Specifications to read:

"The flagger shall be stationed to the satisfaction of the Engineer and be equipped with a fluorescent orange, fluorescent yellow/green or a combination of fluorescent orange and fluorescent yellow/green vest meeting the requirements of the American National Standards Institute specification ANSI/ISEA 107-1999 for Conspicuity Class 2 garments and approved flagger traffic control signs conforming to Standard 702001 and Article 702.05(e)."

Revise Article 701.04(c)(6) of the Standard Specifications to read:

"(6) Nighttime Flagging. The flagger station shall be lit by additional overhead lighting other than streetlights. The flagger shall be equipped with a fluorescent orange or fluorescent orange and fluorescent yellow/green garment meeting the requirements of the American National Standards Institute specification ANSI/ISEA 107-1999 for Conspicuity Class 2 garments."

Placement of Arrow Boards

Effective: August 1, 2001

Add the following to Article 701.04 of the Standard Specifications:

"(g) Arrow Boards. Arrow boards shown on standards or in the plans at the beginning of tapers, shall be placed at the beginning of the taper or in the closed lane within the first 90 m (300 ft) of the taper."

Transient Voltage Surge Suppression

Effective: August 1, 2003

Revise the first paragraph of Article 1074.03(a)(4) of the Standard Specifications to read:

"(4) Transient Voltage Surge Suppression. The cabinet shall be provided with transient voltage surge suppression. Transient surge suppression unit leads shall be kept as short as possible and ground shall be made directly to the cabinet wall or ground plate as near as possible to the object being grounded. All transient surge suppression units shall be tested and certified as meeting this specification by an independent testing laboratory. One copy of each of the full testing report shall be submitted to the Engineer."

Revise Article 1074.03(a)(4)a. of the Standard Specifications to read:

"a. Surge Suppressor. The suppressor protecting the solid state controller, conflict monitor, and detection equipment shall consist of two stages: stage one which shall include a controller cabinet AC power protection assembly and stage two which shall include AC circuit protection.

The design of the stage one suppressor shall be modular and it shall be installed in such a way that it may be removed and replaced with the intersection under power and in flashing operation. It shall have a permanently mounted and wired base and a removable circuit package. The stage one suppressor shall have two LED failure indicators for power 'on' and suppression 'failure' and shall meet the following properties:

Stage One Suppressor	
Properties	Criteria
"Plug-in" suppression module	12 pin connector assembly
Clamp voltage	250 V at 20,000 A typical
Response time	Less than 5 nanoseconds
Maximum continuous service current	15 A at 120 VAC 60 Hz
High frequency noise attenuation	At least 50 dB at 100,000 Hz
Operating temperature	-40 °C (-40 °F) to 85 °C (185 °F)

If the controller assembly includes a system telemetry module or remote intersection monitor, the status of the stage one suppressor shall be continuously and remotely monitored by an appropriate alarm circuit.

The stage two, high speed, solid state, transient suppressor shall protect the system from transient over voltage without affecting power at the load. It shall suppress transients of either polarity and from either direction (source or load). The suppressor shall have a visual "on" indicator lamp when the unit is operating normally. It shall also have a UL plastic enclosure, a four position terminal strip for power connection, and it shall utilize silicon avalanche diode technology. The stage two suppressor shall meet the following properties:

Stage Two Suppressor	
Properties	Criteria
Nominal service voltage	120 V at 50/60 Hz
Maximum voltage protection level	±330 V
Minimum voltage protection level	±220 V ±5%
Minimum surge current rating	700 A
Stand by power	Less than 0.5 Watts
Hot to neutral leakage current at 120 V RMS	Less than 5μA
Maximum response time	5 nanoseconds
Operating and Storage temperature	-20 °C (-4 °F) to 50 °C (122 °F)"

Epoxy Coatings for Steel Reinforcement

Effective: April 1, 2003

Revise Article 1006.10(b)(2) of the Standard Specifications to read:

"(2) Epoxy Coated Reinforcement Bars. Epoxy coated reinforcement bars shall conform to the requirements of AASHTO M 284M (M 284), except:

a. The maximum thickness of epoxy coating on spiral reinforcement, coated after fabrication, shall be 0.5 mm (20 mils).

b. No more than eight of the holidays permitted shall be in any 300 mm (1 ft) of length for continuity of coating.

The epoxy coating applicator shall be certified under the Concrete Reinforcing Steel Institute's (CRSI) Epoxy Plant Certification Program.

The epoxy coater shall provide access for the Engineer at any time during production or shipping. Random bars may be checked at the epoxy coater's facility or the jobsite for coating uniformity, thickness and discontinuity; cracks on the bends; and other damaged areas. Upon request, the coater shall provide samples for testing by the Engineer.

Bars may be sheared or sawn to length after coating, provided end damage to coating does not extend more than 15 mm (1/2 in.) back and the cut end is patched before any visible oxidation appears. Flame cutting will not be permitted."

Add the following paragraph after the first paragraph of Article 1006.11(b) of the Standard Specifications:

"The epoxy coating applicator shall be certified under the Concrete Reinforcing Steel Institute's (CRSI) Epoxy Plant Certification Program."

Hand Vibrator

Effective: November 1, 2003

Add the following paragraph to Article 1103.17(a) of the Standard Specifications:

"The vibrator shall have a non-metallic head for areas containing epoxy coated reinforcement. The head shall be coated by the manufacturer. The hardness of the non-metallic head shall be less than the epoxy coated reinforcement, resulting in no damage to the epoxy coating. Slip-on covers will not be allowed."

Freeze-Thaw Rating

Effective: November 1, 2002

Revise the first sentence of Article 1004.02(f) of the Standard Specifications to read:

"When coarse aggregate is used to produce portland cement concrete for base course, base course widening, pavement, driveway pavement, sidewalk, shoulders, curb, gutter, combination curb and gutter, median, paved ditch or their repair using concrete, the gradation permitted will be determined from the results of the Department's Freeze-Thaw Test."

Traffic Structures

Effective: November 1, 2002

Add the following sentence to the end of the first paragraph of Article 1069.01(a)(1) of the Standard Specifications:

> "Light poles shall be designed for 145 km/hr (90 mph) wind velocity and a minimum design life of 50 years."

Add the following sentence to the end of the third paragraph of Article 1069.04(a) of the Standard Specifications:

> "Light towers shall be designed for 145 km/hr (90 mph) wind velocity and a minimum design life of 50 years."

Revise the last sentence of the first paragraph of Article 1077.03(a)(1) of the Standard Specifications to read:

> "The design shall be according to AASHTO "Standard Specification for Structural Supports for Highway Signs, Luminaries and Traffic Signals" 1994 Edition for 130 km/hr (80 mph) wind velocity. However the arm-to-pole connection shall be according to the "ring plate" detail as shown in Figure 11-1(f) of the 2002 Interim, to the AASHTO "Standard Specification for Structural Supports for Highway Signs, Luminaries and Traffic Signals" 2001 4th Edition."

Temporary Erosion Control

Effective: November 1, 2002

Revise the fifth sentence of the third paragraph of Article 280.04(a) of the Standard Specifications to read:

"This work may be constructed of hay or straw bales, extruded UV resistant high density polyethylene panels, erosion control blanket, mulch barrier, aggregate barriers, excavation, seeding, or mulch used separately or in combination, as approved, by the Engineer."

Add the following paragraphs after the fifth paragraph of Article 280.04(a) of the Standard Specifications.

"A ditch check constructed of extruded, UV resistant, high density polyethylene panels, "M" pins and erosion control blanket shall consist of the following materials:

Extruded, UV resistant, high density polyethylene panels shall have a minimum height of 250 mm (10 in.) and minimum length of 1.0 m (39.4 in.). The panels shall have a 51 mm (2 in.) lip along the bottom of the panel. Each panel shall have a single rib thickness of 4 mm (5/32 in.) with a 12 mm (1/2 in.) distance between the ribs. The panels shall have an average apparent opening size equal to 4.75 mm (No. 4) sieve, with an average of 30 percent open area. The tensile strength of each panel shall be 26.27 kN/m (1800 lb/ft) in the machine direction and 7.3 kN/m (500 lb/ft) in the transverse direction when tested according to ASTM D 4595.

"M" pins shall be at least 76 mm (3 in.) by 686 mm (27 in.), constructed out of deformed grade C1008 D3.5 rod (0.211 in. diameter). The rod shall have a minimum tensile strength of 55 MPa (8000 psi).

Erosion control blanket shall conform to Article 251.04.

A section of erosion control blanket shall be placed transverse to the flowline direction of the ditch prior to the construction of the polyethylene ditch check. The length of the section shall extend from the top of one side of the ditch to the top of the opposite side of the ditch, while the width of the section shall be one roll width of the blanket. The upstream edge of the erosion control blanket shall be secured in a 100 mm (4 in.) trench. The blanket shall be secured in the trench with 200 mm (8 in.) staples placed at 300 mm (1 ft) intervals along the edge before the trench is backfilled. Once the upstream edge of the blanket is secured, the downstream edge shall be secured with 200 mm (8 in.) staples placed at 300 mm (1 ft) intervals along the edge. The polyethylene ditch check shall be installed in the middle of the erosion control blanket, with the lip of each panel facing outward.

The ditch check shall consist of two panels placed back to back forming a single row. Placement of the first two panels shall be at the toe of the backslope or sideslope, with the panels extending across the bottom of the ditch. Subsequent panels shall extend both across the bottom of the ditch and up the opposite sideslope, as well as up the original backslope or sideslope at the distance determined by the Engineer.

The M pins shall be driven through the panel lips to secure the panels to the ground. M pins shall be installed in the center of the panels with adjacent panels overlapping the ends a minimum of 50 mm (2 in.). The pins shall be placed through both sets of panels at each overlap. They shall be installed at an interval of three M pins per one meter (39 in.) length of ditch check. The panels shall be wedged into the M pins at the top to ensure firm contact between the entire bottom of the panels and the soil."

Multilane Pavement Patching

Effective: November 1, 2002

Pavement broken and holes opened for patching shall be completed prior to weekend or holiday periods. Should delays of any type or for any reason prevent the completion of the work, temporary patches shall be constructed. Material able to support the average daily traffic and meeting the approval of the Engineer shall be used for the temporary patches. The cost of furnishing, placing, maintaining, removing and disposing of the temporary work, including traffic control, shall be the responsibility of the Contractor.

Work Zone Traffic Control Devices

Effective: January 1, 2003
Revised: April 1, 2003

Add the following to Article 702.01 of the Standard Specifications:

"All devices and combinations of devices shall meet the requirements of the National Cooperative Highway Research Program (NCHRP) Report 350 for their respective categories. The categories are as follows:

Category 1 includes small, lightweight, channelizing and delineating devices that have been in common use for many years and are known to be crashworthy by crash testing of similar devices or years of demonstrable safe performance. These include cones, tubular markers, flexible delineators and plastic drums with no attachments. Category 1 devices shall be crash tested and accepted or may be self-certified by the manufacturer.

Category 2 includes devices that are not expected to produce significant vehicular velocity change but may otherwise be hazardous. These include drums and vertical panels with lights, barricades and portable sign supports. Category 2 devices shall be crash tested and accepted for Test Level 3.

Category 3 includes devices that are expected to cause significant velocity changes or other potentially harmful reactions to impacting vehicles. These include crash cushions, truck mounted attenuators and other devices not meeting the definitions of Category 1 or 2. Category 3 devices shall be crash tested and accepted for Test Level 3.

Category 4 includes portable or trailer-mounted devices such as arrow boards, changeable message signs, temporary traffic signals and area lighting supports. Currently, there is no implementation date set for this category and it is exempt from the NCHRP 350 compliance requirement.

The Contractor shall provide a manufacturer's self-certification letter for each Category 1 device and an FHWA acceptance letter for each Category 2 and Category 3 device used on the contract. The letters shall state the device meets the NCHRP 350 requirements for its respective category and test level, and shall include a detail drawing of the device."

Delete the third, fourth and fifth paragraphs of Article 702.03(b) of the Standard Specifications.

Delete the third sentence of the first paragraph of Article 702.03(c) of the Standard Specifications.

Delete the fourth paragraph of Article 702.05(a) of the Standard Specifications.

Revise the sixth paragraph of Article 702.05(a) of the Standard Specifications to read:

> "When the work operations exceed four days, all signs shall be post mounted unless the signs are located on the pavement or define a moving or intermittent operation. When approved by the Engineer, a temporary sign stand may be used to support a sign at 1.2 m (5 ft) minimum where posts are impractical. Longitudinal dimensions shown on the plans for the placement of signs may be increased up to 30 m (100 ft) to avoid obstacles, hazards or to improve sight distance, when approved by the Engineer. "ROAD CONSTRUCTION AHEAD" signs will also be required on side roads located within the limits of the mainline "ROAD CONSTRUCTION AHEAD" signs."

Delete all references to "Type 1A barricades" and "wing barricades" throughout Section 702 of the Standard Specifications.

Fluorescent Orange Sheeting on Drums

Effective: November 1, 2000
Revised: January 1, 2003

Revise the first sentence of the first paragraph of Article 702.03(e) of the Standard Specifications to read:

"Drums shall be nonmetallic and have alternating reflectorized Type AA or Type AP fluorescent orange and reflectorized white horizontal, circumferential stripes."

Vertical Barricades

Effective: November 1, 2002
Revised: January 1, 2003

Add the following to Article 702.03 of the Standard Specifications:

"(h) Vertical Barricades. Vertical Barricades shall meet the requirements of the National Cooperative Highway Research Program (NCHRP) Report 350 and the special provision "Work Zone Traffic Control Devices". Vertical barricades may be used in lieu of cones, drums or Type I and Type II barricades to channelize traffic. Vertical barricades shall not be used in lane closure tapers."

Concrete Admixtures

Effective: January 1, 2003
Revised: January 1, 2004

Revise Article 1020.05(b) of the Standard Specifications to read:

"(b) Admixtures. Except as specified, the use of admixtures to increase the workability or to accelerate the hardening of the concrete will be permitted only when approved in writing by the Engineer. The Department will maintain an Approved List of Concrete Admixtures. When the Department permits the use of a calcium chloride accelerator, it shall be according to Article 442.02, Note 5.

When the atmosphere or concrete temperature is 18 °C (65 °F) or higher, a retarding admixture meeting the requirements of Article 1021.03 shall be used in the Class BD Concrete and portland cement concrete bridge deck overlays. The amount of retarding admixture to be used will be determined by the Engineer. The proportions of the ingredients of the concrete shall be the same as without the retarding admixture except that the amount of mixing water shall be reduced, as may be necessary, in order to maintain the consistency of the concrete as required. In addition, a high range water-reducing admixture shall be used in Class BD Concrete. The amount of high range water-reducing admixture will be determined by the Engineer. At the option of the Contractor, a water-reducing admixture may be used. Type I cement shall be used.

For Class PC and PS Concrete, a retarding admixture may be added to the concrete mixture when the concrete temperature is 18 °C (65 °F) or higher. The Engineer may order or permit the use of a retarding or water-reducing admixture whenever the Engineer considers it appropriate.

At the Contractor's option, admixtures in addition to an air-entraining admixture may be used for Class PP-1 concrete. The accelerator shall be the non-chloride type. If a water-reducing or retarding admixture is used, the cement factor may be reduced a maximum 18 kg/cu m (0.30 hundredweight/cu yd). If a high range water-reducing admixture is used, the cement factor may be reduced a maximum 36 kg/cu m (0.60 hundredweight/cu yd). Cement factor reductions shall not be cumulative when using multiple admixtures. An accelerator shall always be added prior to a high range water-reducing admixture, if both are used.

If Class C fly ash or ground granulated blast-furnace slag is used in Class PP-1 concrete, a water-reducing or high range water-reducing admixture shall be used. However, the cement factor shall not be reduced if a water-reducing, retarding, or high range water-reducing admixture is used. In addition, an accelerator shall not be used.

For Class PP-2 or PP-3 concrete, a non-chloride accelerator followed by a high range water-reducing admixture shall be used, in addition to the air-entraining admixture. For Class PP-3 concrete, the non-chloride accelerator shall be calcium nitrite.

For Class PP-2 or PP-3 concrete, the Contractor has the option to use a water-reducing admixture. A retarding admixture shall not be used unless approved by the Engineer. A water-reducing, retarding, or high range water-reducing admixture shall not be used to reduce the cement factor.

When the air temperature is less than 13 °C (55 °F) for Class PP-1 or PP-2 concrete, the non-chloride accelerator shall be calcium nitrite.

For Class PP-4 concrete, a high range water-reducing admixture shall be used in addition to the air-entraining admixture. The Contractor has the option to use a water-reducing admixture. An accelerator shall not be used. For stationary or truck mixed concrete, a retarding admixture shall be used to allow for haul time. The Contractor has the option to use a mobile portland cement concrete plant according to Article 1103.04, but a retarding admixture shall not be used unless approved by the Engineer. A water-reducing, retarding, or high range water-reducing admixture shall not be used to reduce the cement factor.

If the Department specifies a calcium chloride accelerator for Class PP-1 concrete, the maximum chloride dosage shall be 1.0 L (1.0 quart) of solution per 45 kg (100 lb) of cement. The dosage may be increased to a maximum 2.0 L (2.0 quarts) per 45 kg (100 lb) of cement if approved by the Engineer. If the Department specifies a calcium chloride accelerator for Class PP-2 concrete, the maximum chloride dosage shall be 1.3 L (1.3 quarts) of solution per 45 kg (100 lb) of cement. The dosage may be increased to a maximum 2.6 L (2.6 quarts) per 45 kg (100 lb) of cement if approved by the Engineer.

For Class PV, MS, SI, RR, SC and SH concrete, at the option of the Contractor, or when specified by the Engineer, a water-reducing admixture or a retarding admixture may be used. The amount of water-reducing admixture or retarding admixture permitted will be determined by the Engineer. The air-entraining admixture and other admixtures shall be added to the concrete separately, and shall be permitted to intermingle only after they have separately entered the concrete batch. The sequence, method and equipment for adding the admixtures shall be approved by the Engineer. The water-reducing admixture shall not delay the initial set of the concrete by more than one hour. Type I cement shall be used.

When a water-reducing admixture is added, a cement factor reduction of up to 18 kg/cu m (0.30 hundredweight/cu yd), from the concrete designed for a specific slump without the admixture, will be permitted for Class PV, MS, SI, RR, SC and SH concrete. When an approved high range water-reducing admixture is used, a cement factor reduction of up to 36 kg/cu m (0.60 hundredweight/cu yd), from a specific water cement/ratio without the admixture, will be permitted based on a 14 percent minimum water reduction. This is applicable to Class PV, MS, SI, RR, SC and SH concrete. A cement factor below 320 kg/cu m (5.35 hundredweight/cu yd) will not be permitted for Class PV, MS, SI, RR, SC and SH concrete. A cement factor reduction will not be allowed for concrete placed underwater. Cement factor reductions shall not be cumulative when using multiple admixtures.

For use of admixtures to control concrete temperature, refer to Articles 1020.14(a) and 1020.14(b).

The maximum slumps given in Table 1 may be increased to 175 mm (7 in.) when a high range water-reducing admixture is used for all classes of concrete except Class PV and PP."

Revise Section 1021 of the Standard Specifications to read:

"SECTION 1021. CONCRETE ADMIXTURES

1021.01 General. Admixtures shall be furnished in liquid form ready for use. The admixtures may be delivered in the manufacturer's original containers, bulk tank trucks or such containers or tanks as are acceptable to the Engineer. Delivery shall be accompanied by a ticket which clearly identifies the manufacturer and trade name of the material. In all cases, containers shall be readily identifiable to the satisfaction of the Engineer as to manufacturer and trade name of the material they contain.

Prior to inclusion of a product on the Department's Approved List of Concrete Admixtures, the manufacturer shall submit a report prepared by an independent laboratory accredited by the AASHTO Accreditation Program. The report shall show the results of physical tests conducted no more than five years prior to the time of submittal, according to applicable specifications.

Tests shall be conducted using materials and methods specified on a "test" concrete and a "reference" concrete, together with a certification that no changes have been made in the formulation of the material since the performance of the tests. The report shall also include water contents and results of set time tests according to AASHTO T 197 that were conducted on both a test and reference concrete, using cement from the source that is used as a standard by the Bureau of Materials and Physical Research. The cement content for all required tests shall either be according to applicable specifications or 335 kg/cu m (5.65 cwt/cu yd). Compressive strength test results for six months and one year will not be required.

Prior to the approval of an admixture, the Engineer may conduct all or part of the applicable tests on a sample that is representative of the material to be furnished. The test and reference concrete mixtures tested by the Engineer will contain a cement content of 335 kg/cu m (5.65 cwt/cu yd).

The manufacturer shall submit certification, both initially and annually thereafter, giving the following information according to ASTM C 494; the average and manufacturing range of specific gravity, the average and manufacturing range of solids in the solution, and the average and manufacturing range of pH. The initial and annual certifications shall further state that all admixtures, except chloride-based accelerators, shall contain no more than 0.3 percent chloride by mass. The initial submittal shall also include an infrared spectrophotometer trace no more than five years old.

Annual re-submittals will be required and shall include certification that no changes have been made in the formulation since it was initially approved. The certification shall state that the admixture is the same as previously approved, and the Engineer may conduct such tests as deemed desirable to check the properties of the material before re-approval is granted.

When test results are more than seven years old, the manufacturer shall re-submit the infrared spectrophotometer trace and the report prepared by an independent laboratory that is accredited by AASHTO Accreditation Program.

1021.02 Air-Entraining Admixtures. Air-entraining admixtures shall conform to the requirements of AASHTO M 154.

If the manufacturer certifies that the air-entraining admixture is an aqueous solution of Vinsol resin that has been neutralized with sodium hydroxide (caustic soda), testing for compliance with the requirements may be waived by the Engineer. In the certification, the manufacturer shall show complete information with respect to the formulation of the solution, including the number of parts of Vinsol resin to each part of sodium hydroxide. Before the approval of its use is granted, the Engineer will test the solution for its air-entraining quality in comparison with a solution prepared and kept for that purpose.

1021.03 Retarding and Water-Reducing Admixtures. The admixture shall comply with the following requirements:

(a) The retarding admixture shall comply with the requirements of AASHTO M 194, Type B (retarding) or Type D (water-reducing and retarding).

(b) The water-reducing admixture shall comply with the requirements of AASHTO M 194, Type A.

(c) The high range water-reducing admixture shall comply with the requirements of AASHTO M 194, Type F (high range water-reducing) or Type G (high range water-reducing and retarding).

When a Type F or Type G high range water-reducing admixture is used, water-cement ratios shall be a minimum of 0.32.

Type F or Type G admixtures may be used, subject to the following restrictions:

For Class MS, SI, RR, SC and SH concrete, the water-cement ratio shall be a maximum of 0.44.

The Type F or Type G admixture shall be added at the jobsite unless otherwise directed by the Engineer. The initial slump shall be a minimum of 40 mm (1 1/2 in.) prior to addition of the Type F or Type G admixture, except as approved by the Engineer.

When a Type F or Type G admixture is used, retempering with water or with a Type G admixture will not be allowed. An additional dosage of a Type F admixture, not to exceed 40 percent of the original dosage, may be used to retemper concrete once, provided set time is not unduly affected. A second retempering with a Type F admixture may be used for all classes of concrete except Class PP and SC, provided that the dosage does not exceed the dosage used for the first retempering, and provided that the set time is not unduly affected. No further retempering will be allowed.

Air tests shall be performed after the addition of the Type F or Type G admixture.

1021.04 Set Accelerating Admixtures. The admixture shall comply with the requirements of AASHTO M 194, Type C (accelerating) or Type E (water reducing and accelerating)"

Portland Cement Concrete

Effective: November 1, 2002

Add the following paragraph after the fourth paragraph of Article 1103.01(b) of the Standard Specifications:

> "The truck mixer shall be approved before use according to the Bureau of Materials and Physical Research's Policy Memorandum, "Approval of Concrete Plants and Delivery Trucks"."

Add the following paragraph after the first paragraph of Article 1103.01(c) of the Standard Specifications:

> "The truck agitator shall be approved before use according to the Bureau of Materials and Physical Research's Policy Memorandum, "Approval of Concrete Plants and Delivery Trucks"."

Add the following paragraph after the first paragraph of Article 1103.01(d) of the Standard Specifications:

> "The nonagitator truck shall be approved before use according to the Bureau of Materials and Physical Research's Policy Memorandum, "Approval of Concrete Plants and Delivery Trucks"."

Revise the first sentence of the first paragraph of Article 1103.02 of the Standard Specifications to read:

"The plant shall be approved before production begins according to the Bureau of Materials and Physical Research's Policy Memorandum, "Approval of Concrete Plants and Delivery Trucks"."

Curing and Protection of Concrete Construction

Effective: January 1, 2004

Revise the second and third sentences of the eleventh paragraph of Article 503.06 of the Standard Specifications to read:

"Forms on substructure units shall remain in place at least 24 hours. The method of form removal shall not result in damage to the concrete."

Delete the twentieth paragraph of Article 503.22 of the Standard Specifications.

Revise the "Unit Price Adjustments" table of Article 503.22 of the Standard Specifications to read:

"UNIT PRICE ADJUSTMENTS	
Type of Construction	Percent Adjustment in Unit Price
For concrete in substructures, culverts (having a waterway opening of more than 1 sq m (10 sq ft)), pump houses, and retaining walls (except concrete pilings, footings and foundation seals):	
When protected by:	
Protection Method II	115%
Protection Method I	110%
For concrete in superstructures:	
When protected by:	
Protection Method II	123%
Protection Method I	115%
For concrete in footings:	
When protected by:	
Protection Method I, II or III	107%
For concrete in slope walls:	
When protected by:	
Protection Method I	107%"

Delete the fourth paragraph of Article 504.05(a) of the Standard Specifications.

Revise the second and third sentences of the fifth paragraph of Article 504.05(a) of the Standard Specifications to read:

"All test specimens shall be cured with the units according to Article 1020.13."

Revise the first paragraph of Article 504.06(c)(6) of the Standard Specifications to read:

"Curing and Low Air Temperature Protection. The curing and protection for precast, prestressed concrete members shall be according to Article 1020.13 and this Article."

Revise the first sentence of the second paragraph of Article 504.06(c)(6) of the Standard Specifications to read:

"For curing, air vents shall be in place, and shall be so arranged that no water can enter the void tubes during the curing of the members."

Revise the first sentence of the third paragraph of Article 504.06(c)(6) of the Standard Specifications to read:

"As soon as each member is finished, the concrete shall be covered with curing material according to Article 1020.13."

Revise the eighth paragraph of Article 504.06(c)(6) of the Standard Specifications to read:

"The prestressing force shall not be transferred to any member before the concrete has attained the compressive strength of 28,000 kPa (4000 psi) or other higher compressive release strength specified on the plans, as determined from tests of 150 mm (6 in.) by 300 mm (12 in.) cylinders cured with the member according to Article 1020.13. Members shall not be shipped until 28-day strengths have been attained and members have a yard age of at least 4 days."

Delete the third paragraph of Article 512.03(a) of the Standard Specifications.

Delete the last sentence of the second paragraph of Article 512.04(d) of the Standard Specifications.

Revise the "Index Table of Curing and Protection of Concrete Construction" table of Article 1020.13 of the Standard Specifications to read:

"INDEX TABLE OF CURING AND PROTECTION OF CONCRETE CONSTRUCTION			
TYPE OF CONSTRUCTION	CURING METHODS	CURING PERIOD DAYS	LOW AIR TEMPERATURE PROTECTION METHODS
Cast-in-Place Concrete: [11/]			
Pavement Shoulder	1020.13(a)(1)(2)(3)(4)(5)[3/ 5/]	3	1020.13(c)
Base Course Base Course Widening	1020.13(a)(1)(2)(3)(4)(5)[1/ 2/]	3	1020.13(c)
Driveway Median Curb Gutter Curb and Gutter Sidewalk Slope Wall	1020.13(a)(1)(2)(3)(4)(5)[4/ 5/]	3	1020.13(c)[16/]
Paved Ditch Catch Basin Manhole Inlet Valve Vault	1020.13(a)(1)(2)(3)(4)(5)[4/]	3	1020.13(c)
Pavement Patching	1020.13(a)(1)(2)(3)(4)(5)[2/]	3[12/]	1020.13(c)
Pavement Replacement	1020.13(a)(1)(2)(3)(4)(5)[1/ 2/]	3	442.06(h) and 1020.13(c)
Railroad Crossing	1020.13(a)(3)(5)	1	1020.13(c)
Piles	1020.13(a)(3)(5)	7	1020.13(e)(1)(2)(3)
Footings Foundation Seals	1020.13(a)(1)(2)(3)(4)(5)[4/6/]	7	1020.13(e)(1)(2)(3)
Substructure	1020.13(a)(1)(2)(3)(4)(5)[1/7/]	7	1020.13(e)(1)(2)(3)
Superstructure (except deck)	1020.13(a)(1)(2)(3)(5)[8/]	7	1020.13(e)(1)(2)
Deck	1020.13(a)(5)	7	1020.13(e)(1)(2)[17/]
Retaining Walls	1020.13(a)(1)(2)(3)(4)(5)[1/7/]	7	1020.13(e)(1)(2)
Pump Houses	1020.13(a)(1)(2)(3)(4)(5)[1/]	7	1020.13(e)(1)(2)
Culverts	1020.13(a)(1)(2)(3)(4)(5)[4/6/]	7	1020.13(e)(1)(2)[18/]
Other Incidental Concrete	1020.13(a)(1)(2)(3)(5)	3	1020.13(c)
Precast Concrete: [11/]			
Bridge Beams Piles Bridge Slabs Nelson Type Structural Member	1020.13(a)(3)(5)[9/10/]	As required.[13/]	504.06(c)(6), 1020.13(e)(2)[19/]
All Other Precast Items	1020.13(a)(3)(4)(5)[2/9/10/]	As required.[14/]	504.06(c)(6), 1020.13(e)(2)[19/]
Precast, Prestressed Concrete: [11/]			
All Items	1020.13(a)(3)(5)[9/10/]	Until strand tensioning is released.[15/]	504.06(c)(6), 1020.13(e)(2)[19/]

Notes-General:

1/ Type I, membrane curing only

2/ Type II, membrane curing only

3/ Type III, membrane curing only

4/ Type I, II and III membrane curing

5/ Membrane curing will not be permitted between November 1 and April 15.

6/ The use of water to inundate footings, foundation seals or the bottom slab of culverts is permissible when approved by the Engineer, provided the water temperature can be maintained at 7 °C (45 °F) or higher.

7/ Asphalt Emulsion for Waterproofing may be used in lieu of other curing methods when specified and permitted according to Article 503.18.

8/ On non-traffic surfaces which receive protective coat according to Article 503.19, a linseed oil emulsion curing compound may be used as a substitute for protective coat and other curing methods. The linseed emulsion curing compound will be permitted between April 16 and October 31 of the same year, provided it is applied with a mechanical sprayer according to Article 1101.09 (b), and meets the material requirements of Article 1022.07.

9/ Steam curing (heat and moisture) is acceptable and shall be accomplished by the method specified in Article 504.06(c)(6).

10/ A moist room according to AASHTO M 201 is acceptable for curing.

11/ If curing is required and interrupted because of form removal for cast-in-place concrete items, precast concrete products, or precast prestressed concrete products, the curing shall be resumed within two hours from the start of the form removal.

12/ Curing maintained only until opening strength is attained, with a maximum curing period of three days.

13/ The curing period shall end when the concrete has attained the mix design strength. The producer has the option to discontinue curing when the concrete has attained 80 percent of the mix design strength or after seven days. All strength test specimens shall remain with the units and shall be subjected to the same curing method and environmental condition as the units, until the time of testing.

14/ The producer shall determine the curing period or may elect to not cure the product. All strength test specimens shall remain with the units and shall be subjected to the same curing method and environmental condition as the units, until the time of testing.

15/ The producer has the option to continue curing after strand release.

16/ When structural steel or structural concrete is in place above slope wall, Article 1020.13(c) shall not apply. The protection method shall be according to Article 1020.13(e)(1).

17/ When Article 1020.13(e)(2) is used to protect the deck, the housing may enclose only the bottom and sides. The top surface shall be protected according to Article 1020.13(e)(1).

18/ For culverts having a waterway opening of 1 sq m (10 sq ft) or less, the culverts may be protected according to Article 1020.13(e)(3).

19/ The seven day protection period in the first paragraph of Article 1020.13(e)(2) shall not apply. The protection period shall end when curing is finished. For the third paragraph of Article 1020.13(e)(2), the decrease in temperature shall be according to Article 504.06(c)(6)."

Add the following to Article 1020.13(a) of the Standard Specifications:

"(5) Wetted Cotton Mat Method. After the surface of concrete has been textured or finished, it shall be covered immediately with dry cotton mats. The cotton mats shall be placed in a manner which will not mar the concrete surface. A texture resulting from the cotton mat material is acceptable. The cotton mats shall then be wetted immediately and thoroughly

soaked with a gentle spray of water. For bridge decks, a foot bridge shall be used to place and wet the cotton mats.

The cotton mats shall be maintained in a wetted condition until the concrete has hardened sufficiently to place soaker hoses without marring the concrete surface. The soaker hoses shall be placed on top of the cotton mats at a maximum 1.2 m (4 ft) spacing. The cotton mats shall be kept wet with a continuous supply of water for the remainder of the curing period. Other continuous wetting systems may be used if approved by the Engineer.

After placement of the soaker hoses, the cotton mats shall be covered with white polyethylene sheeting or burlap-polyethylene blankets.

For construction items other than bridge decks, soaker hoses or a continuous wetting system will not be required if the alternative method keeps the cotton mats wet. Periodic wetting of the cotton mats is acceptable.

For areas inaccessible to the cotton mats on bridge decks, curing shall be according to Article 1020.13(a)(3)."

Revise the first paragraph of Article 1020.13(c) of the Standard Specifications to read:

"Protection of Portland Cement Concrete, Other Than Structures, From Low Air Temperatures. When the official National Weather Service forecast for the construction area predicts a low of 0 °C (32 °F), or lower, or if the actual temperature drops to 0 °C (32 °F), or lower, concrete less than 72 hours old shall be provided at least the following protection:"

Delete Article 1020.13(d) and Articles 1020.13(d)(1),(2),(3),(4) of the Standard Specifications.

Revise the first five paragraphs of Article 1020.13(e) of the Standard Specifications to read:

"Protection of Portland Cement Concrete Structures From Low Air Temperatures. When the official National Weather Service Forecast for the construction area predicts a low below 7 °C (45 °F), or if the actual temperature drops below 7 °C (45 °F), concrete less than 72 hours old shall be provided protection. Concrete shall also be provided protection when placed during the winter period of December 1 through March 15. Concrete shall not be placed until the materials, facilities and equipment for protection are approved by the Engineer.

When directed by the Engineer, the Contractor may be required to place concrete during the winter period. If winter construction is specified, the Contractor shall proceed with the construction, including concrete, excavation, pile driving, steel erection and all appurtenant work required for the complete construction of the item, except at times when weather conditions make such operations impracticable.

Regardless of the precautions taken, the Contractor shall be responsible for protection of the concrete placed and any concrete damaged by cold temperatures shall be removed and replaced by the Contractor at his/her own expense."

Add the following at the end of the third paragraph of Article 1020.13(e)(1) of the Standard Specifications:

"The Contractor shall provide means for checking the temperature of the surface of the concrete during the protection period."

Revise the second sentence of the first paragraph of Article 1020.13(e)(2) of the Standard Specifications to read:

"The Contractor shall provide means for checking the temperature of the surface of the concrete or air temperature within the housing during the protection period."

Delete the last sentence of the first paragraph of Article 1020.13(e)(3) of the Standard Specifications.

Add the following Article to Section 1022 of the Standard Specifications:

"**1022.06 Cotton Mats.** Cotton mats shall consist of a cotton fill material, minimum 400 g/sq m (11.8 oz/sq yd), covered with unsized cloth or burlap, minimum 200 g/sq m (5.9 oz/sq yd), and be tufted or stitched to maintain stability.

Cotton mats shall be in a condition satisfactory to the Engineer. Any tears or holes in the mats shall be repaired.

Add the following Article to Section 1022 of the Standard Specifications:

"**1022.07 Linseed Oil Emulsion Curing Compound.** Linseed oil emulsion curing compound shall be composed of a blend of boiled linseed oil and high viscosity, heavy bodied linseed oil emulsified in a water solution. The curing compound shall meet the requirements of a Type I, II, or III according to Article 1022.01, except the drying time requirement will be waived. The oil phase shall be 50 ± 4 percent by volume. The oil phase shall consist of 80 percent by mass (weight) boiled linseed oil and 20 percent by mass (weight) Z-8 viscosity linseed oil. The water phase shall be 50 ± 4 percent by volume."

Revise Article 1020.14 of the Standard Specifications to read:

"**1020.14 Temperature Control for Placement.** Temperature control for concrete placement shall conform to the following requirements:

(a) Temperature Control other than Structures. The temperature of concrete immediately before placing, shall be not less than 10 °C (50 °F) nor more than 32 °C (90 °F). Aggregates and/or water shall be heated or cooled as necessary to produce concrete within these temperature limits.

When the temperature of the plastic concrete reaches 30 °C (85 °F), an approved retarding admixture shall be used or the approved water reducing admixture in use shall have its dosage increased by 50 percent over the dosage recommended on the Department's Approved List of Concrete Admixtures for the temperature experienced. The amount of retarding admixture to be used will be determined by the Engineer. This requirement may be waived by the Engineer when fly ash compensated mixtures are used.

Plastic concrete temperatures up to 35 °C (96 °F), as placed, may be permitted provided job site conditions permit placement and finishing without excessive use of water on and/or overworking of the surface. The occurrence within 24 hours of unusual surface distress shall be cause to revert to a maximum 32 °C (90 °F) plastic concrete temperature.

Concrete shall not be placed when the air temperature is below 5 °C (40 °F) and falling or below 2 °C (35 °F), without permission of the Engineer. When placing of concrete is authorized during cold weather, the Engineer may require the water and/or the aggregates to be heated to not less than 20 °C (70 °F) nor more than 65 °C (150 °F). The aggregates may be heated by either

steam or dry heat prior to being placed in the mixer. The apparatus used shall heat the mass uniformly and shall be so arranged as to preclude the possible occurrence of overheated areas which might damage the materials. No frozen aggregates shall be used in the concrete.

For pavement patching, refer to Article 442.06(e) for additional information on temperature control for placement.

(b) Temperature Control for Structures. The temperature of concrete as placed in the forms shall be not less than 10 °C (50 °F) nor more than 32 °C (90 °F). Aggregates and/or water shall be heated or cooled as necessary to produce concrete within these temperature limits. When insulated forms are used, the temperature of the concrete mixture shall not exceed 25 °C (80 °F). If the Engineer determines that heat of hydration might cause excessive temperatures in the concrete, the concrete shall be placed at a temperature between 10 °C (50 °F) and 15 °C (60 °F), per the Engineer's instructions. When concrete is placed in contact with previously placed concrete, the temperature of the concrete may be increased as required to offset anticipated heat loss.

Concrete shall not be placed when the air temperature is below 7 °C (45 °F) and falling or below 4 °C (40 °F), without permission of the Engineer. When placing of concrete is authorized during cold weather, the Engineer may require the water and/or the aggregates to be heated to not less than 20 °C (70 °F) nor more than 65 °C (150 °F). The aggregates may be heated by either steam or dry heat prior to being placed in the mixer. The apparatus used shall heat the mass uniformly and shall be so arranged as to preclude the possible occurrence of overheated areas which might damage the materials. No frozen aggregates shall be used in the concrete.

When the temperature of the plastic concrete reaches 30 °C (85 °F), an approved retarding admixture shall be used or the approved water reducing admixture in use shall have its dosage increased by 50 percent over the dosage recommended on the Department's Approved List of Concrete Admixtures for the temperature experienced. The amount of retarding admixture to be used will be determined by the Engineer. This requirement may be waived by the Engineer when fly ash compensated mixtures are used.

(c) Temperature. The concrete temperature shall be determined according to ASTM C 1064."

REQUIRED CONTRACT PROVISIONS FEDERAL-AID CONSTRUCTION CONTRACTS

I. GENERAL

1. These contract provisions shall apply to all word performed on the contract by the contractor's own organization and with the assistance of workers under the contractor's immediate superintendence and to all work performed on the contract by piecework, station work, or by subcontract.

2. Except as otherwise provided for in each section, the contractor shall insert in each subcontract all of the stipulations contained in these Required Contract Provisions, and further require their inclusion in any lower tier subcontract or purchase order that may in turn be made. The Required Contract Provisions shall not be incorporated by reference in any case. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with these Required Contract Provisions.

3. A breach of any of the stipulations contained in these Required Contract Provisions shall be sufficient grounds for termination of the contract.

4. A breach of the following clauses of the Required Contract Provisions may also be grounds for debarment as provided in 29 CFR 5.12:

Section I, paragraph 2;
Section IV, paragraphs 1, 2, 3, 4 and 7;
Section V, paragraphs 1 and 2a through 2g.

5. Disputes arising out of the labor standards provisions of Section IV (except paragraph 5) and Section V of these Required Contract Provisions shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the U.S. Department of Labor (DOL) as set forth in 29 CFR 5, 6 and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the DOL, or the contractor's employees or their representatives.

6. Selection of Labor: During the performance of this contract, the contractor shall not:

a. Discriminate against labor from any other State, possession, or territory of the United States (except for employment preference for Appalachian contracts, when applicable, as specified in Attachment A), or

b. Employ convict labor for any purpose within the limits of the project unless it is labor performed by convicts who are on parole, supervised release, or probation.

II. NONDISCRIMINATION

(Applicable to all Federal-aid construction contracts and to all related subcontracts of $10,000 or more.)

1. Equal Employment Opportunity: Equal employment opportunity (EEO) requirements not to discriminate and to take affirmative action to assure equal opportunity as set forth under laws, executive orders, rules, regulations (28 CFR 35, 29 CFR 1630 and 41 CFR 60 (and orders of the Secretary of Labor as modified by the provisions prescribed herein, and imposed pursuant to 23 U.S.C. 140 shall constitute the EEO and specific affirmative action standards for the contractor's project activities under this contract. The Equal Opportunity Construction Contract Specifications set forth under 41 CFR 60-4.3 and the provisions of the American Disabilities Act of 1990 (42 U.S.C. 12101 et seq.) set forth under 28 CFR 35 and 29 CFR 1630 are incorporated by reference in this contract. In the execution of this contract, the contractor agrees to comply with the following minimum specific requirement activities of EEO:

a. The contractor will work with the State highway agency (SHA) and the Federal Government in carrying out EEO obligations and in their review of his/her activities under the contract.

b. The contractor will accept as his operating policy the following statement:

"It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, color, national origin, age or disability. Such action shall include: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship, preapprenticeship, and/or on-the-job-training."

2. EEO Officer: The contractor will designate and make known to the SHA contracting officers an EEO Officer who will have the responsibility for an must be capable of effectively administering and promoting an active contractor program of EEO and who must be assigned adequate authority and responsibility to do so.

3. Dissemination of Policy: All members of the contractor's staff who are authorized to hire, supervise, promote, and discharge employees, or who recommend such action, or who are substantially involved in such action, will be made fully cognizant of, and will implement, the contractor's EEO policy and contractual responsibilities to provide EEO in each grade and classification of employment. To ensure that the above

agreement will be met, the following actions will be taken as a minimum:

a. Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months, at which time the contractor's EEO policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer.

b. All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer, covering all major aspects of the contractor's EEO obligations within thirty days following their reporting for duty with the contractor.

c. All personnel who are engaged in direct recruitment for the project will be instructed by the EEO Officer in the contractor's procedures for locating and hiring minority group employees.

d. Notices and posters setting forth the contractor's EEO policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.

e. The contractor's EEO policy and the procedures to implement such policy will be brought to the attention of employees by means of meetings, employee handbooks, or other appropriate means.

4. Recruitment: When advertising for employees, the contractor will include in all advertisements for employees the notation: "An Equal Opportunity Employer." All such advertisements will be placed in publications having a large circulation among minority groups in the area from which the project work force would normally be derived.

a. The contractor will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employees referral sources likely to yield qualified minority group applicants. To meet this requirement, the contractor will identify sources of potential minority group employees, and establish which such identified sources procedures whereby minority group applicants may be referred to the contractor for employment consideration.

b. In the event the contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, he is expected to observe the provisions of that agreement to the extent that the system permits the contractor's compliance with EEO contract provisions. (The DOL has held that where implementation of such agreements have the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Executive Order 11246, as amended.)

c. The contractor will encourage his present employees to refer minority group applicants for employment. Information and procedures with regard to referring minority group applicants will be discussed with employees.

5. Personnel Actions: Wages, working conditions, and employee benefits shall be established and administered, and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoff, and termination, shall be taken without regard to race, color, religion, sex, national origin, age or disability. The following procedures shall be followed:

a. The contractor will conduct periodic inspections of project sites to insure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.

b. The contractor will periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.

c. The contractor will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the contractor will promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.

d. The contractor will promptly investigate all complaints of alleged discrimination made to the contractor in connection with his obligations under this contract, will attempt to resolve such complaints, and will take appropriate corrective action within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action shall include such other persons. Upon completion of each investigation, the contractor will inform every complainant of all of his avenues of appeal.

6. Training and Promotion:

a. The contractor will assist in locating, qualifying, and increasing the skills of minority group and women employees, and applicants for employment.

b. Consistent with the contractor's work force requirements and as permissible under Federal and State regulations, the contractor shall make full use of training programs, i.e., apprenticeship, and on-the-job training programs for the geographical area of contract performance. Where feasible, 25 percent of apprentices or trainees in each occupation shall be in their first year of apprenticeship or training. In the event a special provision for training is provided under this contract, this subparagraph will be superseded as indicated in the special provision.

c. The contractor will advise employees and applicants for employment of available training programs and entrance requirements for each.

d. The contractor will periodically review the training and promotion potential of minority group and women employees and will encourage eligible employees to apply for such training and promotion.

7. Unions: If the contractor relies in whole or in part upon unions as a source of employees, the contractor will use his/her best efforts to obtain the cooperation of such unions to increase opportunities for minority groups and women within the unions, and to effect referrals by such unions of minority and female employees. Actions by the contractor either directly or through a contractor's association acting as agent will include the procedures set forth below:

a. The contractor will use best efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minority group members and women for membership in the unions and increasing the skills of minority group employees and women so that they may qualify for higher paying employment.

b. The contractor will use best efforts to incorporate an EEO clause into each union agreement to the end that such union will be contractually bound to refer applicants without regard to their race, color, religion, sex, national origin, age or disability.

c. The contractor is to obtain information as to the referral practices and policies of the labor union except that to the extent such information is within the exclusive possession of the labor union and such labor union refuses to furnish such information to the contractor, the contractor shall so certify to

the SHA and shall set forth what efforts have been made to obtain such information.

d. In the event the union is unable to provide the contractor with a reasonable flow of minority and women referrals within the time limit set forth in the collective bargaining agreement, the contractor will, through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex, national origin, age or disability; making full efforts to obtain qualified and/or quailifiable minority group persons and women. (The DOL has held that it shall be no excuse that the union with which the contractor has a collective bargaining agreement providing for exclusive referral failed to refer minority employees.) In the event the union referral practice prevents the contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such contractor shall immediately notify the SHA.

8. Selection of Subcontractors, Procurement of Materials and Leasing of Equipment: The contractor shall not discriminate on the grounds of race, color, religion, sex, national origin, age or disability in the selection and retention of subcontractors, including procurement of materials and leases of equipment.

a. The contractor shall notify all potential subcontractors and suppliers of his/her EEO obligations under this contract.

b. Disadvantaged business enterprises (DBE), as defined in 49 CFR 23, shall have equal opportunity to compete for and perform subcontracts which the contractor enters into pursuant to this contract. The contractor will use his best efforts to solicit bids from and to utilize DBE subcontractors or subcontractors with meaningful minority group and female representation among their employees. Contractors shall obtain lists of DBE construction firms from SHA personnel.

c. The contractor will use his best efforts to ensure subcontractor compliance with their EEO obligations.

9. Records and Reports: The contractor shall keep such records as necessary to document compliance with the EEO requirements. Such records shall be retained for a period of three years following completion of the contract work and shall be available at reasonable times and places for inspection by authorized representatives of the SHA and the FHWA.

a. The records kept by the contractor shall document the following:

(1) The number of minority and non-minority group members and women employed in each work classification on the project;

(2) The progress and efforts being made in cooperation with unions, when applicable, to increase employment opportunities for minorities and women;

(3) The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minority and female employees; and

(4) The progress and efforts being made in securing the services of DBE subcontractors or subcontractors with meaningful minority and female representation among their employees.

b. The contractors will submit an annual report to the SHA each July for the duration of the project, indicating the number of minority, women, and non-minority group employees currently engaged in each work classification required by the contract work. This information is to be reported on Form FHWA-1391. If on-the-job training is being required by special provision, the contractor will be required to collect and report training data.

III. NONSEGREGATED FACILITIES

(Applicable to all Federal-aid construction contracts and to all related subcontracts of $10,000 or more.)

a. By submission of this bid, the execution of this contract or subcontract, or the consummation of this material supply agreement or purchase order, as appropriate, the bidder, Federal-aid construction contractor, subcontractor, material supplier, or vendor, as appropriate, certifies that the firm does not maintain or provide for its employees any segregated facilities at any of its establishments, and that the firm does not permit its employees to perform their services at any location, under its control, where segregated facilities are maintained. The firm agrees that a breach of this certification is a violation of the EEO provisions of this contract. The firm further certifies that no employee will be denied access to adequate facilities on the basis of sex or disability.

b. As used in this certification, the term "segregated facilities" means any waiting rooms, work areas, restrooms and washrooms, restaurants and other eating areas, timeclocks, locker rooms, and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees which are segregated by explicit directive, or are, in fact, segregated on the basis of race, color, religion, national origin, age or disability, because of habit, local custom, or otherwise. The only exception will be for the disabled when the demands for accessibility override (e.g. disabled parking).

c. The contractor agrees that it has obtained or will obtain identical certification from proposed subcontractors or material suppliers prior to award of subcontracts or consummation of material supply agreements of $10,000 or more and that it will retain such certifications in its files.

IV. PAYMENT OF PREDETERMINED MINIMUM WAGE

(Applicable to all Federal-aid construction contracts exceeding $2,000 and to all related subcontracts, except for projects located on roadways classified as local roads or rural minor collectors, which are exempt.)

1. General:

a. All mechanics and laborers employed or working upon the site of the work will be paid unconditionally and not less often than once a week and without subsequent deduction or rebate on any account [except such payroll deductions as are permitted by regulations (29 CFR 3) issued by the Secretary of Labor under the Copeland Act (40 U.S.C. 276c)] the full amounts of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment. The payment shall be computed at wage rates not less than those contained in the wage determination of the Secretary of Labor (hereinafter "the wage determination") which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the

contractor or its subcontractors and such laborers and mechanics. The wage determination (including any additional classifications and wage rates conformed under paragraph 2 of this Section IV and the DOL poster (WH-1321) or Form FHWA-1495) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers. For the purpose of this Section, contributions made or costs reasonably anticipated for bona fide fringe benefits under Section 1(b)(2) of the Davis-Bacon Act (40 U.S.C. 276a) on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of Section IV, paragraph 3b, hereof. Also, for the purpose of this Section, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs, which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in paragraphs 4 and 5 of this Section IV.

b. Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein, provided, that the employer's payroll records accurately set forth the time spent in each classification in which work is performed.

c. All rulings and interpretations of the Davis-Bacon Act and related acts contained in 29 CFR 1, 3, and 5 are herein incorporated by reference in this contract.

2. Classification:

a. The SHA contracting officer shall require that any class of laborers or mechanics employed under the contract, which is not listed in the wage determination, shall be classified in conformance with the wage determination.

b. The contracting officer shall approve an additional classification, wage rate and fringe benefits only when the following criteria have been met:

(1) the work to be performed by the additional classification requested is not performed by a classification in the wage determination;

(2) the additional classification is utilized in the area by the construction industry;

(3) the proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination; and

(4) with respect to helpers, when such a classification prevails in the area in which the work is performed.

c. If the contractor or subcontractors, as appropriate, the laborers and mechanics (if known) to be employed in the additional classification or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the contracting officer to the DOL, Administrator of the Wage and Hour Division, Employment Standards Administration, Washington, D.C. 20210. The Wage and Hour Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

d. In the event the contractor or subcontractors, as appropriate, the laborers or mechanics to be employed in the additional classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer shall refer the question, including the views of all interested parties and the recommendation of the contracting officer, to the Wage and Hour Administrator for determination. Said Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advised the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

e. The wage rate (including fringe benefits where appropriate) determined pursuant to paragraph 2c or 2d of this Section IV shall be paid to all workers performing work in the additional classification from the first day on which work is performed in the classification.

3. Payment of Fringe Benefits:

a. Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor or subcontractors, as appropriate, shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly case equivalent thereof.

b. If the contractor or subcontractor, as appropriate, does not make payments to a trustee or other third person, he/she may consider as a part of the wages of any laborer or mechanic the amount of any cost reasonably anticipated in providing bona fide fringe benefits under a plan or program, provided that the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

4. Apprentices and Trainees (Programs of the U.S. DOL) and Helpers:

a. Apprentices:

(1) Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the DOL, Employment and Training Administration, Bureau of Apprenticeship and Training, or with a State apprenticeship agency recognized by the Bureau, or if a person is employed in his/her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Bureau of Apprenticeship and Training or a State apprenticeship agency (where appropriate) to be eligible for probationary employment as an apprentice.

(2) The allowable ratio of apprentices to journeyman-level employees on the job site in any craft classification shall not

be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any employee listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate listed in the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor or subcontractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman-level hourly rate) specified in the contractor's or subcontractor's registered program shall be observed.

(3) Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeyman-level hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator for the Wage and Hour Division determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination.

(4) In the event the Bureau of Apprenticeship and Training, or a State apprenticeship agency recognized by the Bureau, withdraws approval of an apprenticeship program, the contractor or subcontractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the comparable work performed by regular employees until an acceptable program is approved.

b. Trainees:

(1) Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the DOL, Employment and Training Administration.

(2) The ratio of trainees to journeyman-level employees on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed.

(3) Every trainee must be paid at not less than the rate specified in the approved program for his/her level of progress, expressed as a percentage of the journeyman-level hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman-level wage rate on the wage determination which provides for less than full fringe benefits for apprentices, in which cases such trainees shall receive the same fringe benefits as apprentices.

(4) In the event the Employment and Training Administration withdraws approval of a training program, the contractor or subcontractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

c. Helpers:
Helpers will be permitted to work on a project if the helper classification is specified and defined on the applicable wage determination or is approved pursuant to the conformance procedure set forth in Section IV. 2. Any worker listed on a payroll at a helper wage rate, who is not a helper under a approved definition, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed.

5. Apprentices and Trainees (Programs of the U.S. DOT):

Apprentices and trainees working under apprenticeship and skill training programs which have been certified by the Secretary of Transportation as promoting EEO in connection with Federal-aid highway construction programs are not subject to the requirements of paragraph 4 of this Section IV. The straight time hourly wage rates for apprentices and trainees under such programs will be established by the particular programs. The ratio of apprentices and trainees to journeymen shall not be greater than permitted by the terms of the particular program.

6. Withholding:

The SHA shall upon its own action or upon written request of an authorized representative of the DOL withhold, or cause to be withheld, from the contractor or subcontractor under this contract or any other Federal contract with the same prime contractor or any other Federally-assisted contract subject to Davis-Bacon prevailing wage requirements which is held by the same prime contractor, as much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainee's and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, the SHA contracting officer may, after written notice to the contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

7. Overtime Requirements:

No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers, mechanics, watchmen, or guards (including apprentices, trainees, and helpers described in paragraphs 4 and 5 above) shall require or permit any laborer, mechanic, watchman, or guard in any workweek in which he/she is employed on such work, to work in excess of 40 hours in such workweek unless such laborer, mechanic, watchman, or guard receives compensation at a rate not less than one-and-one-half times his/her basic rate of pay for all hours worked in excess of 40 hours in such workweek.

8. Violation:

Liability for Unpaid Wages; Liquidated Damages: In the event of any violation of the clause set forth in paragraph 7 above, the contractor and any subcontractor responsible thereof shall be liable to the affected employee for his/her unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory) for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer, mechanic, watchman, or guard employed in violation of the clause set forth in paragraph 7, in the sum of $10 for each calendar day on which such employee was required or permitted to work in excess of the standard work week of 40 hours without payment of the overtime wages required by the clause set forth in paragraph 7.

9. Withholding for Unpaid Wages and Liquidated Damages:

The SHA shall; upon its own action or upon written request of any authorized representative of the DOL withhold, or cause to be withheld, from any monies payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other Federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph 8 above.

V. STATEMENTS AND PAYROLLS

(Applicable to all Federal-aid construction contracts exceeding $2,000 and to all related subcontracts, except for projects located on roadways classified as local roads or rural collectors, which are exempt.)

1. Compliance with Copeland Regulations (29 CFR 3):

The contractor shall comply with the Copeland Regulations of the Secretary of Labor which are herein incorporated by reference.

2. Payrolls and Payroll Records:

a. Payrolls and basic records relating thereto shall be maintained by the contractor and each subcontractor during the course of the work and preserved for a period of 3 years from the date of completion of the contract for all laborers, mechanics, apprentices, trainees, watchmen, helpers, and guards working at the site of the work.

b. The payroll records shall contain the name, social security number, and address of each such employee; his or her correct classification; hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalent thereof the types described in Section 1(b)(2)(B) of the Davis Bacon Act); daily and weekly number of hours worked; deductions made; and actual wages paid. In addition, for Appalachian contracts, the payroll records shall contain a notation indicating whether the employee does, or does not, normally reside in the labor area as defined in Attachment A, paragraph 1. Whenever the Secretary of Labor, pursuant to Section IV, paragraph 3b, has found that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in Section 1(b)(2)(B) of the Davis Bacon Act, the contractor and each subcontractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, that the plan or program has been communicated in writing to the laborers or mechanics affected, and show the cost anticipated or the actual cost incurred in providing benefits. Contractors or subcontractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprentices and trainees, and ratios and wage rates prescribed in the applicable programs.

c. Each contractor and subcontractor shall furnish, each week in which any contract work is performed, to the SHA resident engineer a payroll of wages paid each of its employees (including apprentices trainees, and helpers, described in Section IV, paragraphs 4 and 5, and watchmen and guards engaged on work during the preceding weekly payroll period).

The payroll submitted shall set out accurately and completely all of the information required to be maintained under paragraph 2b of this Section V.

This information may be submitted in any form desired. Optional Form WH-347 is available for this purpose and may be purchased from the Superintendent of Documents (Federal stock number 029-005-0014-1), U.S. Government Printing Office, Washington, D.C. 20402. The prime contractor is responsible for the submission of copies of payrolls by all suncontractors.

d. Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the Contractor or subcontractor or his/her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(1) that the payroll for the payroll period contains the information required to be maintained under paragraph 2b of this Section V and that such information is correct and complete;

(2) that such laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in the Regulations, 29 CFR 3;

(3) that each laborer or mechanic has been paid not less that the applicable wage rate and fringe benefits or cash equivalent for the classification of worked performed, as specified in the applicable wage determination incorporated into the contract.

e. The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph 2d of this Section V.

f. The falsification of any of the above certifications may subject the contractor to civil or criminal prosecution under 18 U/S. C. 1001 and 31 U.S.C. 231.

g. The contractor or subcontractor shall make the records required under paragraph 2b of this Section V available for

inspection, copying, or transcription by authorized representatives of the SHA, the FHWA, or the DOL, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the SHA, the FHWA, the DOL, or all may, after written notice to the contractor, sponsor, applicant, or owner, take such actions as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

VI. RECORD OF MATERIALS, SUPPLIES, AND LABOR

1. On all federal-aid contracts on the national highway system, except those which provide solely for the installation of protective devices at railroad grade crossings, those which are constructed on a force account or direct labor basis, highway beautification contracts, and contracts for which the total final construction cost for roadway and bridge is less than $1,000,000 (23 CFR 635) the contractor shall:

a. Become familiar with the list of specific materials and supplies contained in Form FHWA-47, "Statement of Materials and Labor Used by Contractor of Highway Construction Involving Federal Funds," prior to the commencement of work under this contract.

b. Maintain a record of the total cost of all materials and supplies purchased for and incorporated in the work, and also of the quantities of those specific materials and supplies listed on Form FHWA-47, and in the units shown on Form FHWA-47.

c. Furnish, upon the completion of the contract, to the SHA resident engineer on /Form FHWA-47 together with the data required in paragraph 1b relative to materials and supplies, a final labor summary of all contract work indicating the total hours worked and the total amount earned.

2. At the prime contractor's option, either a single report covering all contract work or separate reports for the contractor and for each subcontract shall be submitted.

VII. SUBLETTING OR ASSIGNING THE CONTRACT

1. The contractor shall perform with its own organization contract work amounting to not less than 30 percent (or a greater percentage if specified elsewhere in he contract) of the total original contract price, excluding any specialty items designated by the State. Specialty items may be performed by subcontract and the amount of any such specialty items performed may be deducted form the total original contract price before computing the amount of work required to be performed by the contractor's own organization (23 CFR 635).

a. "Its own organization" shall be construed to include only workers employed and paid directly by the prime contractor and equipment owned or rented by the prime contractor, with or without operators. Such term does not include employees or equipment of a subcontractor, assignee, or agent of the prime contractor.

b. "Specialty Items" shall be construed to be limited to work that requires highly specialized knowledge, abilities, or equipment not ordinarily available in the type of contracting organizations qualified and expected to bid on the contract as a whole and in general are to be limited to minor components of the overall contract.

2. The contract amount upon which the requirements set forth in paragraph 1 of Section VII is computed includes the cost of material and manufactured products which are to be purchased or produced by the contractor under the contract provisions.

3. The contractor shall furnish (a) a competent superintendent or supervisor who is employed by the firm, has full authority to direct performance of the work in accordance with the contract requirements, and is in charge of all construction operations (regardless of who performs the work) and (b) such other of its own organizational resources (supervision, management, and engineering services) as the SHA contracting officer determines is necessary to assure the performance of the contract.

4. No portion of the contract shall be sublet, assigned or otherwise disposed of except with the written consent of the SHA contracting officer, or authorized representative, and such consent when given shall not be construed to relieve the contractor of any responsibility for the fulfillment of the contract.

Written consent will be given only after the SHA has assured that each subcontract is evidenced in writing and that it contains all pertinent provisions and requirements of the prime contract.

VIII. SAFETY: ACCIDENT PREVENTION

1. In the performance of this contract the contractor shall comply with all applicable Federal, State, and local laws governing safety, health, and sanitation (23 CFR 635). The contractor shall provide all safeguards, safety devices and protective equipment and take any other needed actions as it determines, or as the SHA contracting officer may determine, to be reasonably necessary to protect the life and health of employees on the job and the safety of the public and to protect property in connection with the performance of the work covered by the contract.

2. It is a condition of this contract, and shall be made a condition of each subcontract, which the contractor enters into pursuant to this contract, that the contractor and any subcontractor shall not permit any employee, in performance of the contract, to work in surroundings or under conditions which are unsanitary, hazardous or dangerous to his/her health or safety, as determined under construction safety and health standards (29 CFR 1926) promulgated by the Secretary of Labor, in accordance with Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S. C. 333).

3. Pursuant to 29 CFR 1926.3, it is a condition of this contract that the Secretary of Labor or authorized representative thereof, shall have right of entry to any site of contract performance to inspect or investigate the matter of compliance with the construction safety and health standards and to carry out the duties of the Secretary under Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 333).

IX. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS

In order to assure high quality and durable construction in conformity with approved plans and specifications and a high degree of reliability on statements and representations made by engineers, contractors, suppliers, and workers on Federal-aid highway projects, it is essential that all persons concerned with the project perform their functions as carefully, thoroughly, and honestly as possible. Willful falsification,

distortion, or misrepresentation with respect to any facts related to the project is a violation of Federal law. To prevent any misunderstanding regarding the seriousness of these and similar acts, the following notice shall be posted on each Federal-aid highway project (23 CFR 635) in one or more places where it is readily available to all persons concerned with the project:

NOTICE TO ALL PERSONNEL ENGAGED ON FEDERAL-AID HIGHWAY PROJECTS

18 U.S.C. 1020 reads as follows:

"Whoever, being an officer, agent or employee of the United States, or of any State or Territory, or whoever, whether a person, association, firm, or corporation, knowingly makes any false statement, false representation, or false report as to the character, quality, quantity, or cost of the material used or to be used, or the quantity or quality of the work performed or to be performed, or the cost thereof in connection with the submission of plans, maps, specifications, contracts, or costs of construction on any highway or related project submitted for approval to the Secretary of Transportation; or

Whoever knowingly makes any false statement, false representation, false report or false claim with respect to the character, quality, quantity, or cost of any work performed or to be performed, or materials furnished or to be furnished, in connection with the construction of any highway or related project approved by the Secretary of Transportation; or

Whoever knowingly makes any false statement or false representation as to material fact in any statement, certificate, or report submitted pursuant to provisions of the Federal-aid Roads Act approved July 1, 1916, (39 Stat. 355), as amended and supplemented;

Shall be fined not more than $10,000 or imprisoned not more than 5 years or both."

X. IMPLEMENTATION OF CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT

(Applicable to all Federal-aid construction contracts and to all related subcontracts of $100,000 or more).

By submission of this bid or the execution of this contract, or subcontract, as appropriate, the bidder, Federal-aid construction contractor, or subcontractor, as appropriate, will be deemed to have stipulated as follows:

1. That any facility that is or will be utilized in the performance of this contract, unless such contract is exempt under the Clean Air Act, as amended (42 U.S.C. 1857 et seq., as amended by Pub.L. 91-604), and under the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251 et seq., as amended by Pub.L. 92-500), Executive Order 11738, and regulations in implementation thereof (40 CFR 15) is not listed, on the date of contract award, on the U.S. Environmental Protection Agency (EPA) List of Violating Facilities pursuant to 40 CFR 15.20.

2. That the firm agrees to comply and remain in compliance with all the requirements of Section 114 of the Clean Air Act and Section 308 of the Federal Water Pollution Control Act and all regulations and guidelines listed thereunder.

3. That the firm shall promptly notify the SHA of the receipt of any communication from the Director, Office of Federal Activities, EPA indicating that a facility that is or will be utilized for the contract is under consideration to be listed on the EPA List of Violating Facilities.

4. That the firm agrees to include or cause to be included the requirements of paragraph 1 through 4 of this Section X in every nonexempt subcontract, and further agrees to take such action as the government may direct as a means of enforcing such requirements.

XI. CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION

1. Instructions for Certification - Primary Covered Transactions:

(Applicable to all Federal-aid contracts - 49 CFR 29)

a. By signing and submitting this proposal, the prospective primary participant is providing the certification set out below.

b. The inability of a person to provide the certification set out below will not necessarily result in denial of participation in this covered transaction. The prospective participant shall submit an an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective primary participant to furnish a certification or an explanation shall disqualify such a person from participation in this transaction.

c. The certification in this clause is a material representation of fact upon which reliance was placed when the department or agency determined to enter into this transaction. If it is later determined that the prospective primary participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause of default.

d. The prospective primary participant shall provide immediate written notice to the department or agency to whom this proposal is submitted if any time the prospective primary participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

e. The terms "covered transaction," "debarred," "suspended," "ineligible,""lower tier covered transaction," "participant," "person," "primary covered transaction," "principal," "proposal," and "voluntarily excluded," as used in this clause, have the meanings set out in the Definitions and Coverage sections of rules implementing Executive Order 12549. You may contact the department or agency to which this proposal is submitted for assistance in obtaining a copy of those regulations.

f. The prospective primary participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction.

g. The prospective primary participant further agrees by submitting this proposal that it will include the clause titled

"Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," provided by the department or agency entering into this covered transaction, without modification in all lower tier covered transactions and in all solicitations for lower tier covered transactions.

h. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant may decide the method and frequency by which it determines the eligibility of its principals. Each participant may, but is not required to, check the nonprocurement portion of the "Lists of Parties Excluded from Federal Procurement or Nonprocurement Programs" (Nonprocurement List) which is compiled by the General Services Administration.

i. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

j. Except for transactions authorized under paragraph f of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default.

******

Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Primary Covered Transactions

1. The prospective primary participant certifies to the best of its knowledge and belief, that it and its principals:

a. Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;

b. Have not within a 3-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

c. Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph 1b of this certification; and

d. Have not within a 3-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

2. Where the prospective primary participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

******

2. Instructions for Certification - Lower Tier Covered Transactions:

(Applicable to all subcontracts, purchase orders and other lower tier transactions of $25,000 or more - 49 CFR 29)

a. By signing and submitting this proposal, the prospective lower tier is providing the certification set out below.

b. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department, or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

c. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous by reason of changed circumstances.

d. The terms "covered transaction," "debarred," "suspended," "ineligible," "primary covered transaction," "participant," "person," "principal," "proposal," and "voluntarily excluded," as used in this clause, have the meanings set out in the Definitions and Coverage sections of rules implementing Executive Order 12549. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations.

e. The prospective lower tie participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated.

f. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions.

g. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant may decide the method and frequency by which it determines the eligibility of its principals. Each participant may, but is not required to, check the Nonprocurement List.

h. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealing.

i. Except for transactions authorized under paragraph e of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily

excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

******

Certification Regarding Debarment, Suspension, Ineligibility And Voluntary Exclusion-Lower Tier Covered Transactions:

1. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency.

2. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

******

XII. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING

(Applicable to all Federal-aid construction contracts and to all related subcontracts which exceed $100,000 - 49 CFR 20)

1. The prospective participant certifies, by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:

a. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

b. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

2. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. 1352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

3. The prospective participant also agrees by submitting his or her bid or proposal that he or she shall require that the language of this certification be included in all lower tier subcontracts, which exceed $100,000 and that all such recipients shall certify and disclose accordingly.

MINIMUM WAGES FOR FEDERAL AND FEDERALLY ASSISTED CONSTRUCTION CONTRACTS

This project is funded, in part, with Federal-aid funds and, as such, is subject to the provisions of the Davis-Bacon Act of March 3, 1931, as amended (46 Sta. 1494, as amended, 40 U.S.C. 276a) and of other Federal statutes referred to in a 29 CFR Part 1, Appendix A, as well as such additional statutes as may from time to time be enacted containing provisions for the payment of wages determined to be prevailing by the Secretary of Labor in accordance with the Davis-Bacon Act and pursuant to the provisions of 29 CFR Part 1. The prevailing rates and fringe benefits shown in the General Wage Determination Decisions issued by the U.S. Department of Labor shall, in accordance with the provisions of the foregoing statutes, constitute the minimum wages payable on Federal and federally assisted construction projects to laborers and mechanics of the specified classes engaged on contract work of the character and in the localities described therein.

General Wage Determination Decisions, modifications and supersedes decisions thereto are to be used in accordance with the provisions of 29 CFR Parts 1 and 5. Accordingly, the applicable decision, together with any modifications issued, must be made a part of every contract for performance of the described work within the geographic area indicated as required by an applicable DBRA Federal prevailing wage law and 29 CFR Part 5. The wage rates and fringe benefits contained in the General Wage Determination Decision

NOTICE

The most current **General Wage Determination Decisions** (wage rates) are available on the IDOT web site. They are located on the Letting and Bidding page at http://www.dot.state.il.us/desenv/delett.html.

In addition, ten (10) days prior to the letting, the applicable Federal wage rates will be e-mailed to subscribers. It is recommended that all contractors subscribe to the Federal Wage Rates List or the Contractor's Packet through IDOT's subscription service.

PLEASE NOTE: if you have already subscribed to the Contractor's Packet you will automatically receive the Federal Wage Rates.

The instructions for subscribing are at http://www.dot.state.il.us/desenv/subsc.html.

If you have any questions concerning the wage rates, please contact IDOT's Chief Contract Official at 217-782-7806.